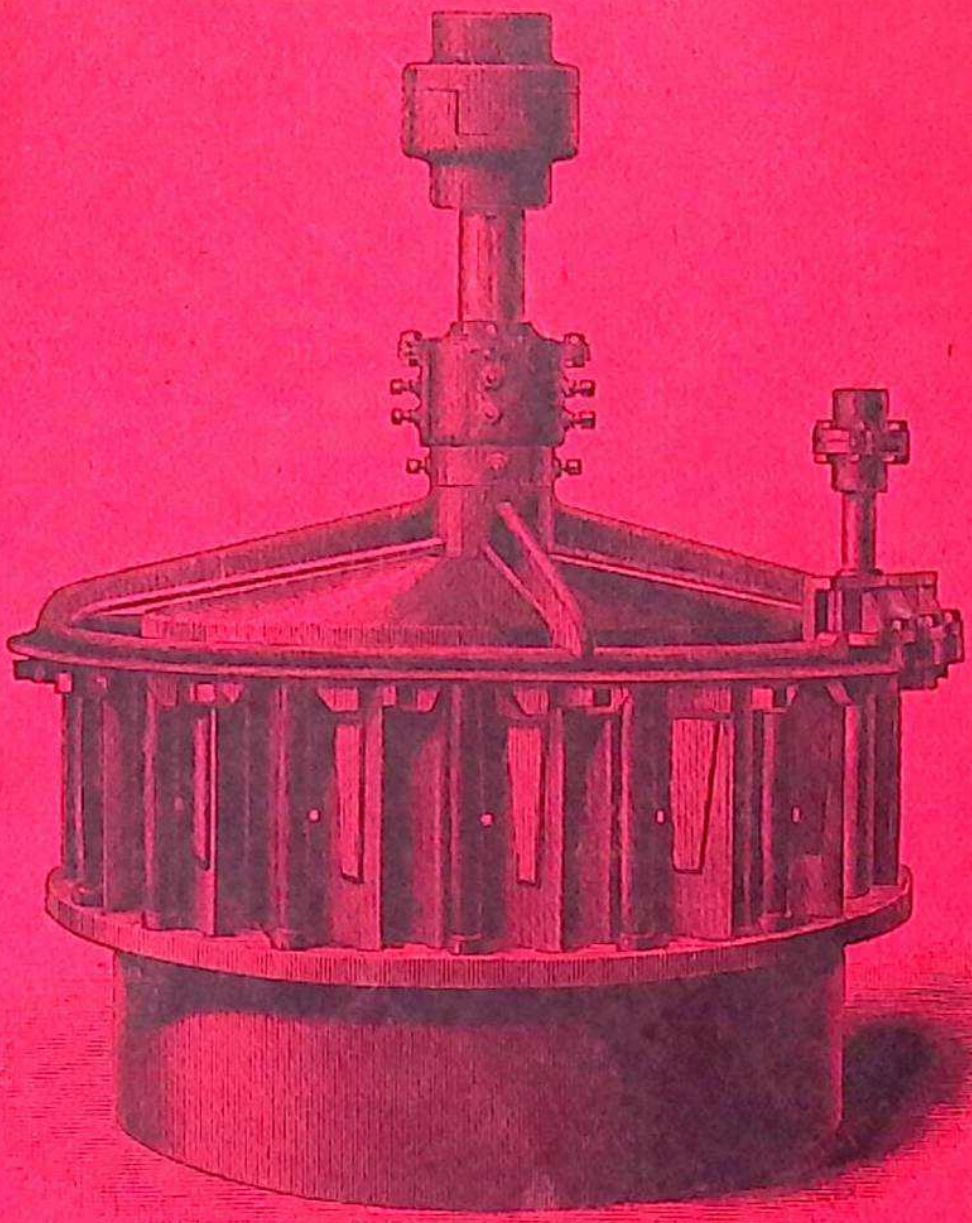
New Success Turbine



Manufactured by

S. Morgan Smith Co.,

York, Pa., U. S. A.

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ILLUSTRATED AND DESCRIPTIVE

Pamphlet and Price List

OF THE

New Success Turbine

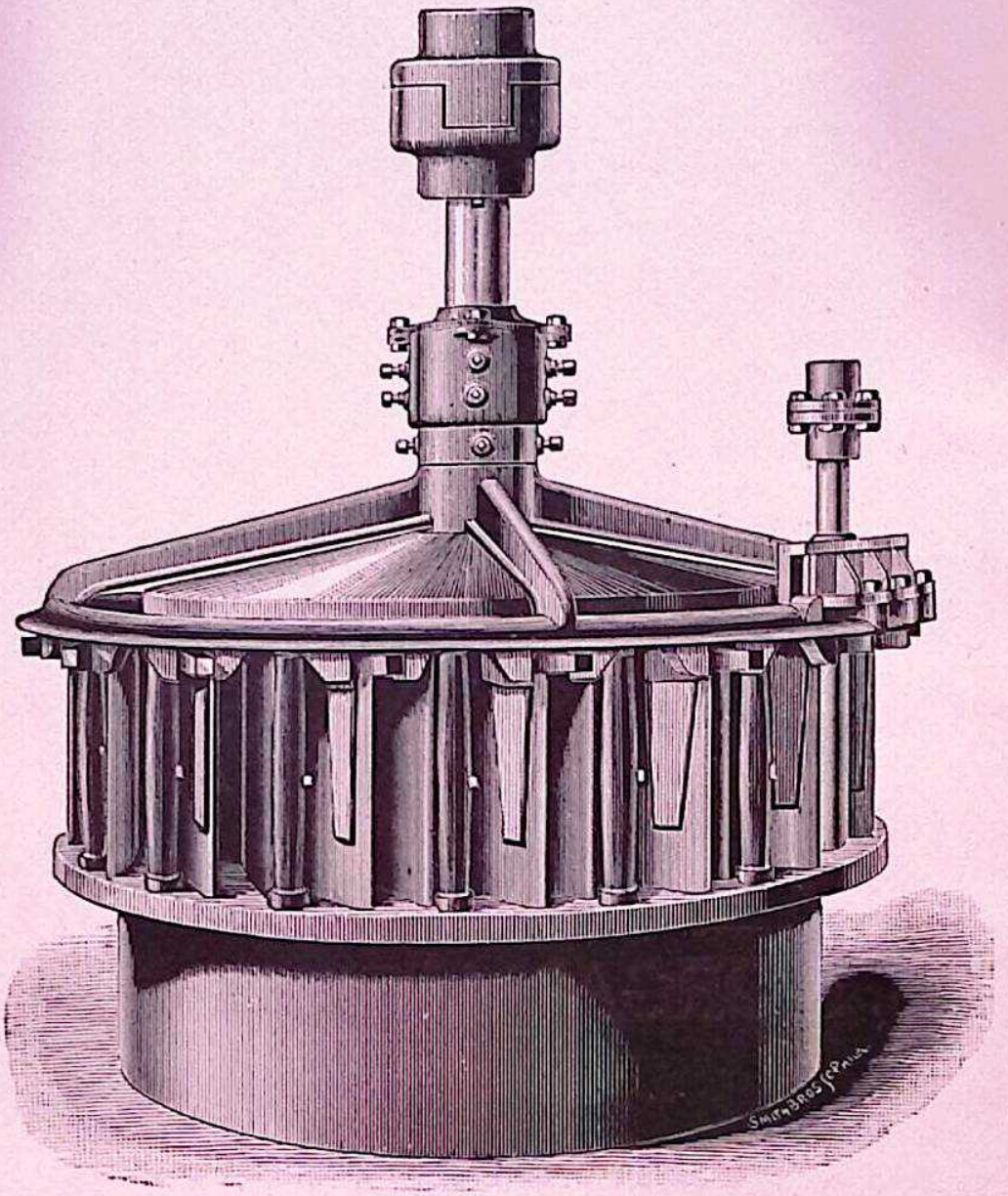
MANUFACTURED BY

S. MORGAN SMITH CO.,

YORK, PA., U. S. A.

P. Anstadt & Sons' Print.

The New Success Turbine.



*ENGRAVING No. 1.

*Engraving No. 1 represents wheel complete and ready for shipment.

THIS is an age of progress. Improvements are made in abundance, and so constantly that the most wide awake readers and observers cannot keep booked except along special lines. Our efforts at progress have been mainly confined to Water Wheels. We own many patents, and have manufactured McCormick and Success wheels for years, and have sold these wheels in most of the countries of the world.

Our latest improvement in turbines is a combination of the good qualities of the McCormick and Success,—which are two of the most widely used and well known water wheels made in the world. The water wheel containing this combination of good qualities, we have named "THE NEW SUCCESS."

Our President, S. Morgan Smith, is the original inventor of the Success wheel. We also have with us an inventor and improver of turbines, John B. McCormick, who is the patentee of the Hercules and Victor wheels, and lastly of the McCormick wheel built by us. These two noted inventors of water wheels,—Smith and McCormick,—have combined their genius in efforts to get up a water wheel equal to the demands of the age in which we live, and the

result is as above stated, "THE NEW SUCCESS WATER WHEEL."

The runner or wheel proper does not resemble that of the old Success, but is like that of the McCormick wheel. The curb or case resembles the old Success and has the excellencies in the gate arrangement of that wheel with valuable improvements. The efficiency of this wheel of 1900 is from 80 to 85 per cent. Tables are made out on a basis of 80 per cent. As tables show the wheel gives a wonderful amount of power per diameter and very high speed.

9-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	292	171	1.0
5	326	197	1.4
6	357	216	1.9
7	386	233	2 5
8	412	250	3.0
9	437	264	3.5
10	462	279	4 2
11	480	292	4.8
12	506	306	5.5
13	526	319	6.3
14	546	330	6.9
15	565	342	7.7
16	584	354	8.5
17	601	364	9.4
18	619	375	10.1
19	636	385	11.0
20	653	395	11.9
21	668	405	12.9
22	685	415	13.7
23	700	423	14.7
24	715	433	15.7
25	730	442	16.6
26	744	451	17,7
27	759	459	18.7
28	772	467	19.7
29	786	476	20.8
30	799	484	21.9
31	812	492	23.0
32	826	500	24.1
33	839	508	25.3
34	851	516	26.4
35	863	522	27.6
36	875	530	28.9
37	887	537	30.0
38	899	545	31.2
39	911	551	32.4
40	924	559	33.7

12-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	218	307	1.8
5	245	344	2.6
6	268	377	3.3
7	289	407	4.2
8	310	435	5.2
9	328	461	6.3
10	346	486	7.3
11	363	511	8.5
12	379	533	9.7
13	394	555	10.8
14	410	576	12.2
15	424	596	13.4
16	437	615	14.9
17	452	635	16.2
18	464	653	17.7
19	477	678	19.3
20	489	688	20.8
21	501	706	22.4
22	513	722	23.0
23	524	739	25.7
24	536	754	27.3
25	547	770	29.1
26	558	785	30.8
27	568	800	32.6
28	579	814	34.5
29	589	829	36.3
30	599	843	38.2
31	609	857	40.1
32	619	871	42.0
33	629	884	44.1
34	639	898	46.1
35	647	911	48.2
36	656	924	50.2
37	666	937	52.3
38	675	949	54.1
39	684	969	56.6
40	693	973	58.8

15-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	175	491	2.9
5	195	549	4.1
6	214	601	5.4
7	232	649	6.8
8	247	694	8.4
9	262	737	9.9
10	277	776	11.7
11	290	814	13.5
12	303	850	15.4
13	315	885	17.3
14	327	918	19.4
15	338	951	21.5
16	350	982	23.7
17	360	1012	25.9
18	371	1041	29.0
19	381	1070	30.7
20	391	1098	33.1
21	401	1125	35.6
22	411	1152	38.3
23	420	1177	40.9
24	429	1202	43.6
25	437	1228	46.3
26	446	1252	49.1
27	455	1276	52.0
28	463	1299	54.9
29	471	1323	58.0
30	479	1345	61.0
31	487	1367	64.0
32	496	1389	67.2
33	503	1411	70.3
34	510	1431	73.6
35	518	1453	76.8
36	525	1473	80.1
37	532	1493	83.5
38	540	1514	86.9
39	546	1533	90.4
40	554	1552	93.8

18-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	141	718	4.3
5	158	803	6.1
6	173	880	7.9
7	187	950	10.0
8	200	1016	12.3
9	212	1077	14.6
10	223	1136	17.1
11	234	1192	19.7
12	245	1244	22.6
13	255	1295	25.4
14	265	1344	28 4
15	273	1391	31.5
16	282	1437	34.7
17	291	1482	38.7
18	300	1524	41.5
19	308	1566	45.0
20	316	1607	48.5
21	324	1647	52.2
22	332	1685	56.0
23	339	1723	59.9
24	346	1760	63.8
25	354	1796	67.9
26	360	1832	71.9
27	367	1867	76.1
28	374	1901	80.4
29	380	1935	84.7
30	387	1968	89.2
31	393	2001	93.7
32	400	2033	98.2
33	407	2064	102.9
34	412	2095	107.6
35	419	2133	112.4
36	424	2156	117.2
37	430	2186	122.2
38	436	2215	127.1
39	442	2244	132.3
40	447	2272	137.3

21-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse power
4	134	1016	6.1
5	150	1136	8.6
6	165	1244	11.2
7	178	1344	14.2
8	190	1437	17.3
9	202	1524	20.7
10	213	1607	24.2
11	223	1685	28.0
12	233	1760	31.9
13	243	1832	35.9
14	251	1901	40.2
15	260	1968	44.6
16	269	2033	49.1
17	278	2095	53.8
18	286	2156	58.6
19	293	2215	63.6
20	301	2272	68.6
21	309	2328	73.9
22	315	2383	79.2
23	323	2437	84.6
24	330	2489	90.3
25	336	2541	96.0
26	343	2591	101.8
27	349	2640	107.7
28	356	2688	113.7
29	363	2736	118.8
30	369	2783	126.1
31	375	2829	132.5
32	381	2875	139.0
33	387	2919	145.5
34	392	2963	152.2
35	398	3007	158.9
36	404	3049	165.8
37	410	3091	172.8
38	415	3133	179.9
39	421	3173	187.0
40	425	3214	194.2

NEW SUCCESS TURBINE.

24-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse power.
4	111	1342	8.1
5	124	1500	11.3
6	136	1644	14.9
7	147	1776	18.8
8	157	1898	22.9
9	167	2013	27.3
10	176	2122	32.1
11	184	2226	36.9
12	192	2325	42.1
13	200	2420	47.5
14	207	2511	53.1
15	215	2599	58.8
16	222	2684	64.8
17	228	2767	71.1
18	235	2847	77.4
19	242	2925	84.0
20	248	3002	90.6
21	255	3075	97.5
22	260	3148	104.6
23	266	3218	111.8
24	272	3288	119.2
25	278	3356	126.7
26	283	3422	134.4
27	289	3487	142.2
28	293	3551	150.2
29	299	3614	158.4
30	304	3676	166.6
31	309	3737	175.0
32	314	3796	183.6
33	319	3855	192.2
34	324	3913	201.0
35	328	3971	210.0
36	333	4027	219.0
37	337	4082	228.2
38	343	4137	237.5
39	347	4191	247.0
40	352	4244	256.5

27-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	103	1699	10.2
5	116	1902	14.3
6	127	2082	18.9
7	137	2249	23.7
8	147	2404	29.1
9	156	2550	34.7
10	163	2687	40.6
11	172	2818	46.8
12	180	2944	53.3
13	187	3065	60.2
14	194	3180	67.3
15	201	3292	74.5
16	207	3399	82.1
17	214	3504	90.0
18	220	3606	98.0
19	226	3705	106.4
20	232	3801	11 48
21	238	3895	123.5
22	244	3986	132.6
23	249	4076	141.7
24	254	4164	151.0
25	259	4250	160.5
26	265	4323	170.3
27	259	4417	180.2
28	275	4497	190.3
29	279	4577	200.5
30	284	4656	211.0
31	289	4732	222.7
32	293	4808	232.5
33	298	4882	243.4
34	302	4956	254.5
35	308	5028	265.9
36	311	5100	277.4
37	315	5171	289.0
38	320	5239	300.8
39	324	5308	312.8
40	328	5375	324.9

30-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	91	2048	12.3
5	102	2190	17.2
6	112	2508	22.6
7	121	2709	28.6
8	129	2878	35.0
9	137	3071	41.8
10	145	3237	48.8
11	151	3395	56.4
12	158	3547	64.3
13	165	3691	72.5
14	171	3831	81.0
15	177	3965	89.9
16	183	4096	99.0
17	189	4222	108.4
18	194	4344	118.1
19	200	4463	128.1
20	204	4579	138.4
21	210	4692	148.8
22	2 4	4803	159.6
23	220	4911	170.7
24	224	5016	181.9
25	228	5119	193.4
26	233	5221	205.1
27	237	5321	217.0
28	242	5418	229.2
29	246	5514	241.6
30	250	5608	254.2
31	255	5701	267.0
32	259	5792	280.1
33	262	5882	293.3
34	267	5970	306.8
35	270	6058	320.3
36	275	6143	334.2
37	278	6228	348.2
38	282	6312	362.4
39	286	6395	376.8
40	289	6476	391.4

33-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	79	2512	15.1
5	89	2809	21.1
6	97	3077	27.9
7	105	3324	35.2
8	112	3553	43.0
9	119	3769	51.2
10	125	3972	60.0
11	132	4167	69.2
12	137	4352	78.9
13	144	4530	89.0
14	148	4701	99.4
15	154	4866	110.3
16	159	5025	121.5
17	163	5180	133.1
18	169	5330	144.9
19	173	5477	157.2
20	178	5619	168.9
21	182	5757	182.7
22	187	5893	195.9
23	191	6026	209.3
24	194	6155	223.2
25	199	6821	237.3
26	203	6407	251.6
27	206	6529	266.3
28	211	6648	281.3
29	214	6766	296.4
30	217	6882	312.0
31	222	6995	327.7
32	225	7108	343.6
33	228	7218	359.9
34	232	7326	376.4
35	235	7433	393.1
36	238	7539	410.1
37	242	7643	427.3
38	245	7745	444.7
39	248	7846	462.4
40	251	7946	480.3

36-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	78	2876	17.3
5	86	3216	24.3
6	95	3523	31.9
7	103	3805	40.2
8	110	4068	49.1
9	116	4315	58.6
10	123	4548	68.7
11	129	4770	79.2
12	135	4982	90.3
13	140	5186	101.8
14	146	5381	113.8
15	150	5570	126.2
16	156	5752	139.0
17	160	5930	152.3
18	165	6102	165.9
19	169	6270	179.9
20	173	6433	194.3
21	178	6591	209.1
22	182	6746	225.2
23	187	6898	239.7
24	191	7047	255.4
25	194	7191	271.6
26	199	7324	288.1
27	202	7473	304.9
28	205	7601	322.0
29	210	7745	339.4
30	213	7878	357.1
31	216	8008	375.0
32	220	8136	393.4
33	224	8262	412.0
34	227	8386	438.0
35	231	8509	450.0
36	234	8629	469.4
37	237	8749	489 1
38	239	8866	509.1
39	243	8982	529.3
40	246	9096	549 8

39-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	67	3381	20.4
5	75	3781	28.5
6	83	4141	37.5
7	90	4473	47.3
8	95	4782	57.8
9	102	5072	68.9
10	107	5346	80.8
11	113	5607	93.2
12	117	5856	106.2
13	122	6096	119.7
14	127	6326	133.8
15	130	6548	148.4
16	134	6762	163.5
17	137	7071	179.0
18	144	7173	195 0
19	148	7370	211.5
20	151	7561	228.5
21	156	7748	245.8
22	159	7930	263.6
23	162	8108	281.7
24	166	8282	300.4
25	170	8453	319 3
26	173	8621	338.7
27	177	8785	358.4
28	180	8946	378.4
29	182	9105	398.9
30	185	9286	419.8
31	189	9413	440.9
32	192	9564	462.4
33	195	9712	484.3
34	198	9859	506.5
35	201	10002	529.0
36	204	10145	551.8
37	206	10284	575.0
38	210	10422	598.4
39	212	10558	622.2
40	215	10693	646 3

42-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	66	4152	25.0
5	73	4642	35.1
6	81	5084	46.0
7	88	5492	58.1
8	93	5871	71.0
9	99	6228	84 6
10	104	6564	99.2
11	110	6885	114.4
12	114	7191	130 3
13	118	7475	147 0
14	123	7767	164.3
15	127	8040	182.2
16	132	8304	200.7
17	136	8559	219.8
18	140	8807	239.5
19	144	9049	259 7
20	147	9283	280.6
21	151	9513	301 8
22	155	9736	323 6
23	158	9956	345 9
24	161	10170	368.7
25	165	10379	392 0
26	168	10585	415.8
27	171	10787	440.0
28	174	10985	464.7
29	178	11179	489 8
30	181	11370	515 4
31	183	11558	541.4
32	187	11743	567.8
33	190	11925	594.7
34	192	12104	621.8
35	195	12281	649 5
36	198	12455	667.5
37	201	12627	705 9
38	203	12797	734.7
39	206	12964	763 9
40	209	13129	793.5

45-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	59	4421	26.7
5	67	4943	37.3
6	73	5624	49.0
7	79	5849	61.8
8	84	6252	75.5
9	90	6631	90.2
10	95	6990	105.6
11	100	7331	121.7
12	104	7657	138.8
13	108	7970	156.5
14	112	8271	174.9
15	116	8561	194.0
16	119	8842	213.7
17	124	9114	234.1
18	127	9378	255.1
19	130	9635	276.6
20	134	9886	298.7
21	137	10129	321.4
22	140	10368	344.6
23	144	10601	368.4
24	147	10828	392.7
25	150	11053	417.4
26	152	11271	442.8
27	156	11486	468.6
28	159	11697	494.8
29	161	11903	521.6
30	165	12107	548.8
31	167	12308	576.5
32	170	12505	604.6
33	172	12698	633.2
34	176	12889	662.2
35	178	13077	691.6
36	180	13263	721.4
37	182	13446	751.9
38	185	13626	782.4
39	188	13805	813.5
40	190	13980	845.0

48-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	57	4987	30.1
5	64	5576	42.0
6	70	6109	55.3
7	76	6597	69.8
8	81	7077	85.2
9	86	7481	101.7
10	91	7886	119.2
11	95	8271	137.4
12	99	8638	156.6
13	103	8991	176.6
14	107	9331	197.3
15	111	9659	218.9
16	114	9975	241.1
17	118	10282	264.2
18	121	10580	287.7
19	124	10870	231.2
20	128	11153	337.4
21	131	11428	362.7
22	134	11697	388.8
23	137	11960	415.6
24	141	12217	443.0
25	143	12470	471.0
26	146	12716	499.5
27	149	12959	528.6
28	152	13196	558.3
29	154	13429	588.4
30	157	13659	619.2
31	159	13885	650.4
32	163	14107	682.2
33	165	14325	714.4
34	168	14542	747.0
35	170	14753	780.2
36	172	14963	814.0
37	174	15169	848.1
38	177	15373	882.7
39	179	15574	917.8
40	181	15773	953.3

51-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse power.
4	54	5678	34.3
5	61	6348	48.0
6	67	6954	63.0
7	72	7512	79.4
8	77	8030	97.0
9	82	8508	115.8
10	86	8979	135.7
11	90	9416	156.5
12	94	9835	178.3
13	99	10237	201.0
14	102	10623	224.7
15	105	10996	249.2
16	108	11357	274.6
17	113	11706	300.7
18	116	12046	327.6
19	118	12376	355.3
20	122	12698	383.7
21	125	13011	412.9
22	128	13318	442.7
23	130	13616	473.2
24	134	13909	504.4
25	136	14186	536.3
26	139	14478	568.8
27	141	14753	601.8
28	145	15024	635.6
29	147	15270	670.0
30	149	15552	704.9
31	151	15809	714.3
32	155	16062	776.6
33	157	16310	813.3
34	159	16555	850.5
35	161	16797	888.4
36	163	17036	926.7
37	166	17270	965.6
38	168	17502	1005.0
39	170	17731	1044.9
40	172	17957	1085.4

NEW SUCCESS TURBINE.

54-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	50	6686	40.4
5	56	7475	56.4
6	61	8195	74.2
7	66	8845	93.6
8	70	9455	114.2
9	74	10029	136.3
10	79	10572	159.7
11	83	11088	184.3
12	86	11580	210.0
13	90	12054	236.6
14	93	12509	264.6
15	96	12937	293.5
16	100	13372	323.3
17	103	13783	354.0
18	106	14183	385.7
19	108	14572	418.3
20	112	14950	451.8
21	115	15320	486.1
22	117	15681	521.2
23	119	16033	557.2
24	123	16378	593.9
25	125	16716	631.4
26	127	17046	669 6
27	130	17371	708.7
28	133	17689	747.4
29	135	18003	788.9
30	137	18311	830.0
31	139	18614	871.9
32	141	18912	914.4
33	144	19205	957.6
34	146	19494	1001.5
35	148	19778	1045.9
36	150	20058	1091.1
37	152	20337	1136.9
38	155	20608	1183.3
39	156	20878	1230.3
40	158	21144	1277.9

57-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	48	7511	45.3
5	55	8386	63.3
6	60	9187	83.3
7	64	9924	104.9
8	69	10608	128.2
9	73	11252	153.0
10	77	11861	178.2
11	81	12440	206.8
12	84	13253	235.6
13	88	13523	265.6
14	91	14033	291.0
15	94	14526	320.4
16	97	15022	362.7
17	101	15464	397.3
18	103	15913	432.7
19	106	16349	469.3
20	110	16774	506.9
21	112	17188	545.4
22	114	17592	584.8
23	117	17988	625.1
24	119	18375	666.3
25	122	18753	708.4
26	124	19125	751.3
27	127	19490	795.1
28	129	19847	839.7
29	132	20199	885.1
30	134	20543	931.2
31	136	20884	978.2
32	138	21217	1025.9
33	140	21546	1074.3
34	143	21870	1123.6
35	145	22189	1173.6
36	147	22504	1224.2
37	148	22815	1275.5
38	150	23121	1327.6
39	152	23423	1380.4
40	154	23722	1433.8

60-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	45	9723	58.7
5	50	10870	82.2
6	55	11908	108.0
7	59	12862	136.0
8	63	13740	165.8
9	68	14584	198.3
10	71	15374	232.3
11	74	16124	267.9
12	78	16842	305.4
13	81	17529	344.2
14	84	18210	384.8
15	86	18829	426.8
16	90	19447	470.1
17	93	20044	514.9
18	95	20625	561.0
19	97	21192	608.4
20	101	21741	657.1
21	103	22279	706.9
22	105	22803	758.0
23	107	23136	810.3
24	111	23187	863.7
25	113	24308	918.2
26	115	24789	973.9
27	117	25262	1030.6
28	119	25725	1087.4
29	121	26181	1147.3
30	123	26629	1207.0
31	125	27068	1268 0
32	127	27501	1329.8
33	129	27928	1392.6
34	131	28348	1456.4
35	133	28762	1521.1
36	135	29170	1586.7
37	137	29573	1653.3
38	139	29970	1720.9
39	141	30361	1789.2
40	143	30748	1858.4

66-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	40	11765	71.1
5	46	13154	99.3
6	50	14409	130.6
7	53	15564	164.6
8	58	16669	201.1
9	61	17648	240.0
10	64	18602	281.0
11	68	19510	324.2
12	71	20378	369.4
13	73	21210	416.6
14	77	22011	465.6
15	79	22783	516.3
16	82	23530	568.9
17	84	24255	623.0
18	86	24957	678.8
19	89	25641	736.2
20	91	26308	795.1
21	94	26958	855.4
22	96	27592	917.2
23	97	28212	980.5
24	100	28819	1045.0
25	102	29413	1111.0
26	104	29996	1178.5
27	106	30567	1247.1
28	108	31128	1317.0
29	110	31678	1388.1
30	112	32221	1460.6
31	114	32753	1534.2
32	116	33277	1609.0
33	117	33793	1685.1
34	119	34297	1762.3
35	121	34802	1860.6
36	123	35296	1920.0
37	124	35782	2000.6
38	126	36264	2082.2
39	128	36738	2164.9
40	130	37206	2248.8

72-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	37	14796	89.3
5	41	16546	113.5
6	48	18119	164.2
7	49	19580	205.3
8	52	20931	252.9
9	56	22194	301.7
10	59	23412	354.6
11	61	24542	407.9
12	64	25627	464.6
13	67	26690	524.2
14	70	27687	586.4
15	72	28662	649.6
16	74	29614	716.0
17	77	30522	759.7
18	79	31408	854.2
19	81	32272	902.3
20	83	33114	1000.7
21	85	33911	1076.0
22	88	34709	1153.8
23	90	35485	1233.2
24	91	36269	1314.9
25	93	37012	1398.4
26	94	37743	1482.8
27	96	38452	1568.8
28	99	39161	1656.8
29	100	39847	1748.5
30	102	40534	1821.5
31	104	41199	1929.9
32	105	41863	2024.7
33	107	42528	2120.7
34	108	43170	2217.9
35	110	43790	2318.4
36	112	44410	2415.8
37	113	45030	2517.6
38	114	45629	2620.0
39	116	46227	2726.9
40	117	46802	2828.8

84-INCH WHEEL.

Head.	Revolutions per Minute.	Discharge Cubic feet per Minute.	Horse Power.
4	33	20146	122 2
5	36	22529	170.1
6	39	24670	223.6
7	42	26661	282.0
8	46	28501	344.4
9	48	30220	408.9
10	50	31879	481.6
11	53	33417	515.4
12	56	34895	632.7
13	58	36342	713.8
14	60	37700	797.5
15	62	39027	884.5
16	64	40323	975.1
17	66	41560	1067.6
18	68	42766	1163.2
19	70	43913	1258.5
20	72	45089	1352.6
21	74	46174	1465.2
22	75	47260	1571.1
23	77	48316	1679.2
24	79	49371	1790 4
25	80	50397	1803.8

PRICE LIST

For the NEW SUCCESS Wheels complete as per Engraving No 1.

Diameter in inches.	PRICE.	Diameter in inches.	PRICE.
9	$ 150.00	42	$ 700.00
12	180.00	45	800.00
15	210.00	48	900.00
18	240.00	51	1000.00
21	270.00	54	1150.00
24	300.00	57	1300.00
27	340.00	60	1500 00
30	400.00	66	1900.00
33	460.00	72	2500.00
36	520.00	84	3500.00
39	600.00		

Write for Discounts from this Price List.

☞ IN ORDERING WATER WHEELS, STATE WHICH WAY THEY SHOULD TURN, WITH OR AGAINST THE SUN, RIGHT OR LEFT.

LEFT HAND

RIGHT HAND

WARRANTY.

Any wheel or wheels that are properly put in, according to directions given, and geared to run when full at work the number of revolutions per minute stated in Tables for the Head of Water they may be working under, failing to give the power claimed in tables of this pamphlet, can be returned, if not broken, to the station to which they were shipped, any time within sixty days, and the money received for such wheels will be refunded. If purchaser finds it impossible to put wheel in and give it a trial within the sixty days allotted, and wants more time, it will be granted on application, not exceeding in all ninety days from date of shipment.

S. MORGAN SMITH CO.

SPECIAL NOTICE.

In ordering a wheel, or asking for information, please give the following data :

What is the head of water when at rest or the vertical distance from surface of tail water to surface of head water?

What quantity of water in cubic feet per minute can be relied on?

What kind and about how much machinery do you wish to drive; stating all particulars?

What speed do you wish the machinery to run?

What is the speed of the main line of shafting?

If a corn or wheat mill, state number and size buhrs and how many bushels of corn or wheat to be ground per hour.

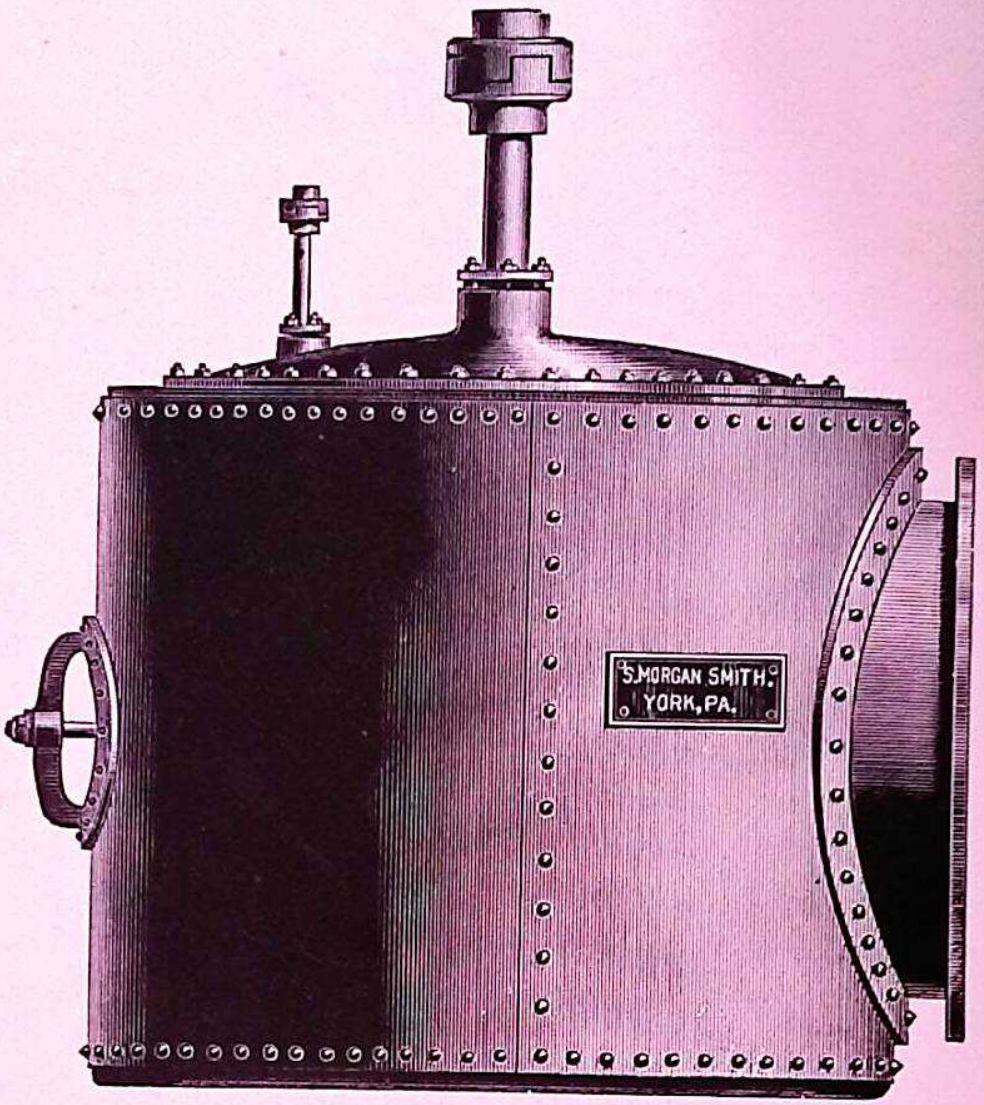
If a roller mill, give number of reductions and amount of flour to be made per hour.

If a circular saw, give the diameter of the saw and the amount to be cut per hour.

If wheel is to take the place of another wheel, give name and size of wheel. And if ordering, give distance from floor of flume to centre of coupling and bore of upper half of coupling.

If wheel is to work on horizontal shaft, give distance from level of tail-water to centre of wheel shaft.

IRON FLUMES FOR WATER WHEELS.



ENGRAVING No. 2.

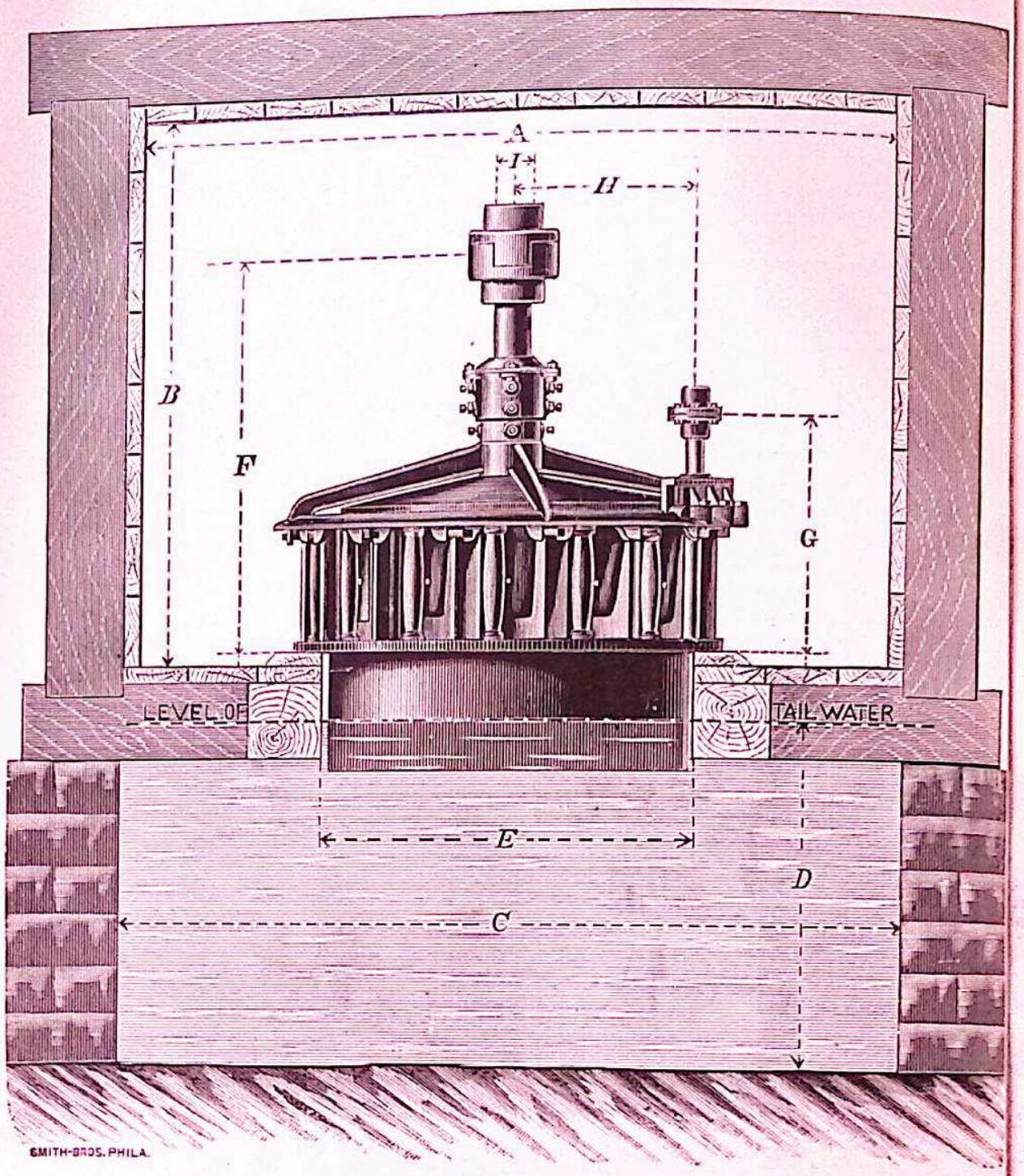
Engraving No. 2 represents iron flume as used for wheels of all sizes, excepting that the cast iron flange on inlet is only used on flumes for wheels 21 inches and smaller. Flumes for larger size wheels have plate steel inlets with ends punched for connecting additional pipe.

Each flume has heavy cast iron top and bottom and steel sides, and is provided with a movable lid and packing boxes for wheel and gate shafts. A large size man door is attached so that access can be had to the wheel on inside of flume.

See dimensions and prices of flumes on page 29.

DIMENSIONS AND PRICE OF IRON FLUMES.

Size of Wheel.	Diameter of Flume in inches.	Diameter of Inlet Pipe.	Distance from Face of Inlet to Centre of Wheelshaft	Price of Flume not including Water Wheel.	Approximate Weight of Flume.	
9	36	20	24	$ 125	1650	For heads not exceeding 40 feet.
12	42	24	27	150	2000	
15	48	30	30	180	2400	
18	54	36	33	200	2800	
21	60	42	38	225	3000	
24	66	48	42	260	3500	
27	72	54	44	300	4200	
30	78	60	48	350	5000	
33	84	66	51	400	5500	
36	90	72	54	450	6000	
39	90	78	54	475	6200	
42	96	84	57	525	7000	For heads not exceeding 25 feet.
45	102	90	60	600	8000	
48	108	90	63	700	9500	
51	114	96	66	800	11000	
54	120	96	70	950	13000	
57	126	102	72	1100	14500	
60	132	108	76	1250	16000	
66	144	114	86	1400	17500	
72	156	120	92	1600	20000	



ENGRAVING No. 3.

The above represents wheel in wooden flume. On page 31 will be found full directions for building them Great care should be taken in building flumes, for in their construction to a great extent depends the efficiency of the wheel.

Table of Dimensions in Inches for Preparing Flumes.

Size of Wheel.	A	B	C	D	E	F	G	I	Extreme Diameter Casting.
9	33	36	When possible should be same width of flume as indicated by letter A.	30	18	24	10	1 5/8	21 1/2
12	36	36		32	20	27	14	1 7/8	24
15	42	42		34	24	30	15	1 7/8	27
18	50	44		36	28	32	16	2 1/8	32
21	54	48		40	34	36	17	2 7/8	36 1/2
24	60	50		42	36	40	18	3 1/8	40
27	66	58		44	42	46	20	3 3/8	43
30	72	60		45	45	48	24	3 5/8	47 1/2
33	84	66		46	47	50	28	3 7/8	50 3/4
36	84	68		48	52	54	30	4 3/8	55
39	90	70		50	55	58	32	4 3/8	61
42	96	74		52	58	60	36	4 7/8	63
45	108	80		54	60	66	40	5 3/8	66
48	114	84		56	63	70	42	5 3/8	72
51	120	86		60	Given on application.	72	44	5 7/8	76
54	126	90		60		74	46	5 7/8	78
57	132	92		62		76	48	6 3/8	84
60	132	96		64		80	54	6 3/8	89
66	144	100		66		84	58	6 7/8	95
72	160	106		70		88	60	6 7/8	100
84	186	126		80		102	72	7 3/8	

Upper half couplings can be bored to suit any size shaft. If size is not given, bore will be made the size given in the above table.

DIRECTIONS FOR SETTING NEW SUCCESS WHEELS.

THE HEAD RACE.

In constructing the canal or head race a very frequent error is committed in failing to give it sufficient capacity. It should be *wide* and *deep*, and especially where the race is of considerable length, and a large quantity of water is to pass through it. As a general rule, the water should not flow faster than from 60 to 120 feet per minute. Where there is a long race, after the wheel has been running three or four hours the head frequently draws down from one to three feet The effect of this is the same as if the dam had been lowered an equal distance—resulting in a loss of power which would have been prevented by making the race as wide and deep as it should be.

WHEEL PIT.

Here is where mill-owners and mill-wrights, in putting in Turbine wheels, are more liable to err than elsewhere. Whether under high or low heads, the pit should be deep and wide. There is no case where this is more important than where a large wheel is run under a low head; as under these circumstances no loss of head, however small, can be afforded. A pit of insufficient size causes the water to react upon the wheel; an additional loss of power is also caused by the fact that a portion of the head is consumed in forcing the water out of the pit where there is not sufficient outlet. As a rule, the depth of the pit should not be less than 20 inches for wheels under 20 inches in diameter. Large wheels should have an opening under them at least as great as their diameter.

Water has but 100 per cent. in it, and a wheel like the New Success that takes out 80 to 85 of that per cent., leaves but little strength in it. To expect that the water coming through our wheels will have power to wash the sand and gravel out of its own pit, is to expect what will not be realized. Hence in putting in wheels, do not calculate upon the water in the wheel pit to do any work for you. If you find it foaming and dashing in the pit, then rest assured that your pit is either too shallow or too narrow, or both.

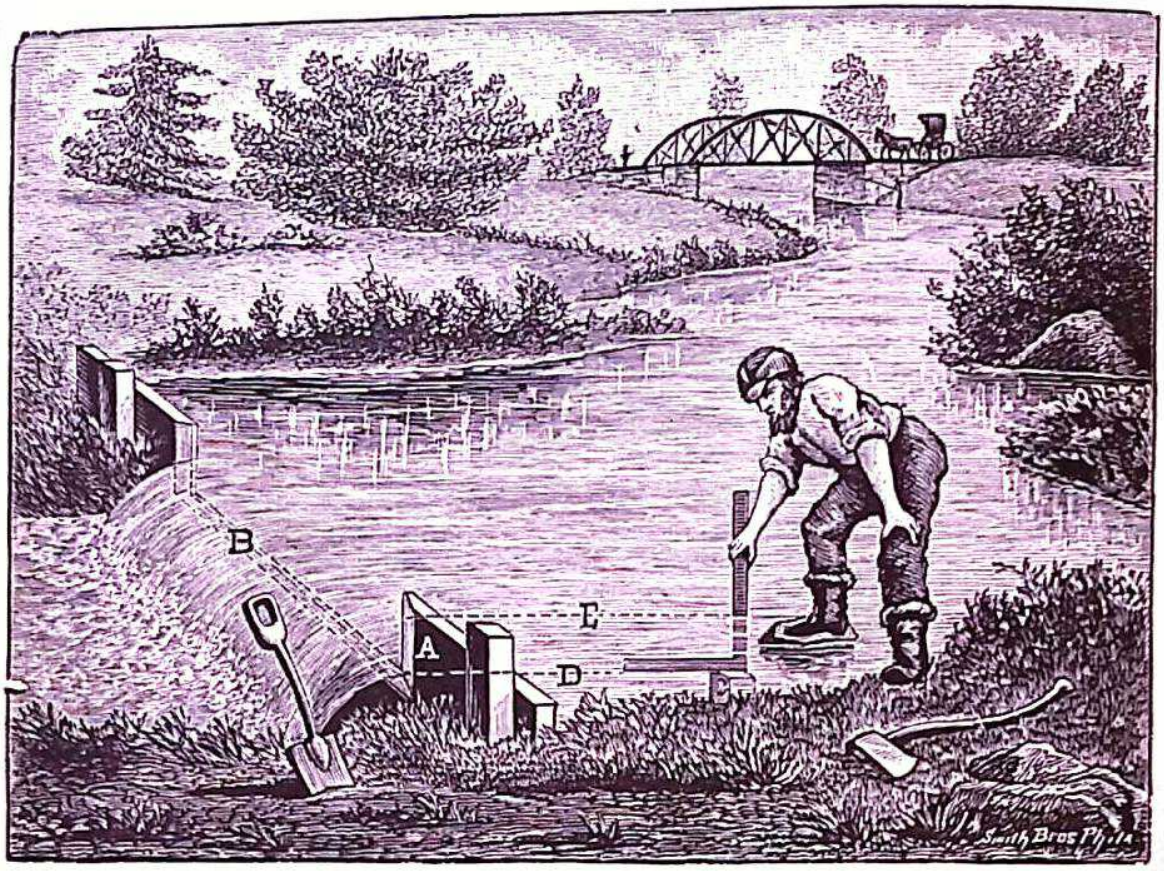
THE TAIL RACE.

This, as also wheel pit, should be wide and deep, and the level of the bottom of the wheel pit should be carried from 4 to 6 feet below the end of the forebay or flume, and if possible it should be carried out to the bed of the main stream, as no tail race for even small wheels should by rights have less than two feet of dead water in it before the wheels are put in motion, and where large wheels (using a great deal of water) are to be used, the tail race should have three or four feet of dead water its entire length. By having tail race thus constructed as soon as the water is discharged from the wheel or wheels, it will push out or displace the dead water without rising very much in the race, thus preventing a loss of head. For instance, to be more plain, suppose the bottom of tail race is on a level with the water in main stream or receiving canal, when wheels are started the water in tail race would rise in proportion to the width of race and quantity of water flowing therein, and reduce the working head in proportion ; while if the race were as first above stated, the water from the wheels would displace the dead water without rising above the water in the main stream, thus utilizing the full amount of head. *From one to three feet of working head is often lost for want of proper depth and width of tail race.*

SETTING WHEELS ABOVE TAIL WATER.

Sometimes in adapting wheels to high and even low heads it becomes necessary to set the wheel some distance above the tail water, and conduct the water from the wheel through a Draft Tube. Parties may obtain as good results when the wheel is set in this manner as though it were placed at the bottom of the fall ; *provided* this Draft Tube is perfectly air-tight, and its mouth submerged from 4 to 6 in. below surface of tail water. As a rule, we would advise that the wheel be set at the bottom of the fall, but in all cases when a Draft Tube is used, we would recommend one made of iron, so as to secure durability and *perfect tightness.* They should be at least one-third larger in diameter than the wheel.

RULES FOR MEASURING WATER.



ENGRAVING No. 4.

In the improvement of water power, the first and most important facts are to ascertain height of head and quantity of water that can be utilized. This being so, we give the following rules and tables for the measurement of water.

Engraving No. 4 shows a weir. A is a board extending across stream with notch B, over which water flows, beveled on down stream side. The stake at which measurements are taken is located 4 to 8 feet from weir, on up stream side, top being on a level with top notch in weir board as per line D. When the full flow of stream is passing over weir the depth will be the distance from line D to line E (obtained by measuring on stake). The level of water surface on down stream side of weir should not be less than 8 inches below bottom of notch B in weir board. (See weir table on next page).

Table Showing the Quantity of Water Passing over Weirs in Cubic Feet per Minute.

Depth of water on weir in inch	Cubic feet per minute passed for each foot of length of weir.	Depth of water on weir in inch	Cubic feet per minute passed for each foot of length of weir.	Depth of water on weir in inch	Cubic feet per minute passed for each foot of length of weir.	Depth of water on weir in inch	Cubic feet per minute passed for each foot of length of weir.
1	4.85	4¾	50.20	8½	120.18	12½	214.32
1⅛	5.78	4⅞	52.18	8⅝	122.82	12¾	220.76
1¼	6.68	5	54.22	8¾	125.52	13	227.30
1⅜	7.80	5⅛	56.25	8⅞	128.14	13¼	233.92
1½	8.90	5¼	58.33	9	130.93	13½	240.54
1⅝	10.00	5⅜	60.42	9⅛	133.65	13¾	247.22
1¾	11.23	5½	62.55	9¼	136.43	14	254.03
1⅞	12.45	5⅝	64.68	9⅜	139.18	14¼	260.83
2	13.72	5¾	66.86	9½	141.99	14½	267.76
2⅛	15.02	5⅞	68.99	9⅝	144.80	14¾	274.70
2¼	16.36	6	71.27	9¾	147.64	15	281.72
2⅜	17.75	6⅛	73.45	9⅞	150.47	15¼	288.82
2½	19.17	6¼	75.77	10	153.35	15½	295.93
2⅝	20.63	6⅜	78.04	10⅛	156.20	15¾	303.10
2¾	22.11	6½	80.36	10¼	159.14	16	310.36
2⅞	23.63	6⅝	82.63	10⅜	162.07	16¼	317.69
3	25.20	6¾	85.04	10½	164.99	16½	325.03
3⅛	26.78	6⅞	87.43	10⅝	167.89	16¾	332.42
3¼	28.43	7	89.82	10¾	169.92	17	339.91
3⅜	30.06	7⅛	92.16	10⅞	173.90	17¼	347.45
3½	31.75	7¼	94.67	11	176.92	17½	355.02
3⅝	33.45	7⅜	97.11	11⅛	179.94	17¾	362.77
3¾	35.22	7½	99.50	11¼	182.99	18	370.34
3⅞	36.98	7⅝	102.10	11⅜	186 03	18¼	378.12
4	38.80	7¾	104.63	11½	189.13	18½	385.87
4⅛	40.63	7⅞	107.13	11⅝	162.20	18¾	393.66
4¼	42.49	8	109.74	11¾	195.32	19	401.63
4⅜	44.39	8⅛	112.31	11⅞	198.47	19¼	409.58
4½	46.29	8¼	114.91	12	201.59	19½	417.48
4⅝	48.22	8⅜	117 51	12¼	207.94	19¾	425.68

TABLE

Giving the Number of Cubic Feet of Water Discharged per Minute, by an Orifice One Inch Square, Under any Head from 3 to 62 Inches.

Head	Cubic Feet	Head	Cubic Feet	Head	Cubic Feet	Head	Cubic Feet	Head	Cubic Feet	Head	Cubic Feet
3″	1.12	13″	2.20	23″	2.91	33″	3.47	43″	3 95	53″	4.39
4	1.27	14	2.27	24	2.97	34	3.52	44	4.00	54	4.42
5	1.41	15	2.36	25	3 03	35	3 57	45	4.05	55	4.46
6	1.53	16	2.44	26	3.09	36	3.63	46	4.10	56	4.52
7	1.64	17	2.51	27	3.15	37	3.67	47	4.13	57	4.55
8	1.75	18	2.58	28	3.20	38	3.72	48	4 18	58	4.58
9	1.85	19	2 65	29	3.26	39	3.77	49	4.22	59	4.63
10	1.94	20	2.72	30	3 32	40	3 82	50	4.27	60	4.66
11	2.03	21	2.78	31	3.37	41	3.86	51	4.30	61	4.72
12	2.12	22	2.85	32	3.42	42	3.92	52	4.34	62	4.74

Example, Showing Application of Above Table.

Suppose the opening to let the water on an overshot wheel be 36 inches long and the gate hoisted 2 inches; the head of water above opening 25 inches. Multiply the length, 36, by 2, (the height the gate is hoisted,) and the result will be 72, the number of square inches in opening.

By referring to the above table, opposite 25 inch head, will be found 3.03; this multiplied by the 72 gives 218.16, the number of cubic feet of water passing through the opening per minute.

Float Measurement of Streams.

In the use of this method it is important that the float be so made that it will sink well into the water. If the stream be wide, and the flow of water not uniform the entire width, the velocity in feet per minute should be taken near the shore and in the centre; the average then is the velocity of the stream.

To ascertain the cubic feet of water, multiply the depth by the width, multiply this product by the velocity in feet per minute, and the result will be the number of cubic feet flowing per minute.

To determine the horse power of a stream, multiply the cubic feet by 62½ and this product by the feet of available head, and divide this product by 33,000, and if you use a SUCCESS WATER WHEEL, deduct from the product obtained 20 per cent., the result will be the power of water in stream.

Actual Discharge of Water As Compared with Measurement of Apertures.

A well constructed Turbine does not discharge a quantity of water equal to its full measurement of apertures, or in other words, in order for a well constructed Turbine to discharge a quantity of water equal to that which would flow through an orifice of a certain size, under a given fall, and where the discharge is free and unobstructed, the apertures in the wheel must greatly exceed that of the simple orifice. The quantity of water discharged by different Turbines varies according to the construction. The controlling cause of this difference is the varying forms, curves and angles given to the guides and buckets. The actual discharge of the New Success Turbine is $\frac{57}{100}$ of the combined area of its apertures.

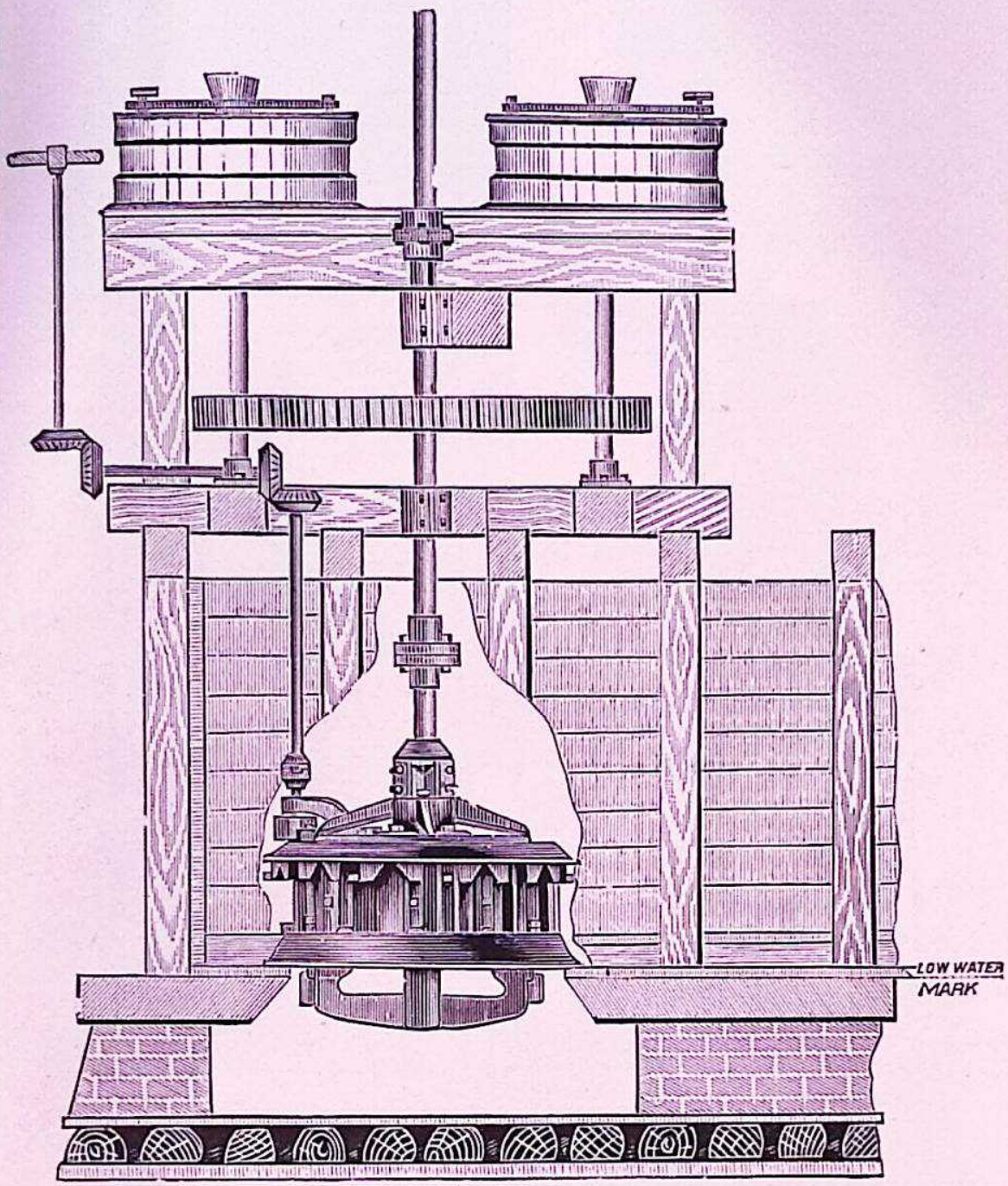
To those not fully versed in hydraulics, let us suppose a wheel, the apertures in the gates of which measure 100 inches, and place it under any given fall; now let us suppose we remove the wheel from the casing and open the gates into the empty space within the casing. As there is nothing to retard its flow, it will rush through the gates with a velocity due to the head under which it is placed. Now, by placing the wheel again within the casing, it acts as a clog

or a check to the flow of water as the water comes in contact with the buckets of the wheel, and instead of passing through the gates with the same velocity as before, it is held back, so that it now passes through the gates with only $\frac{57}{100}$ of its former velocity. Consequently, that a Turbine should discharge a certain quantity of water, the area of the apertures must greatly exceed the aperture that would discharge the same quantity under the same head, when allowed to flow into open air freely and unretarded.

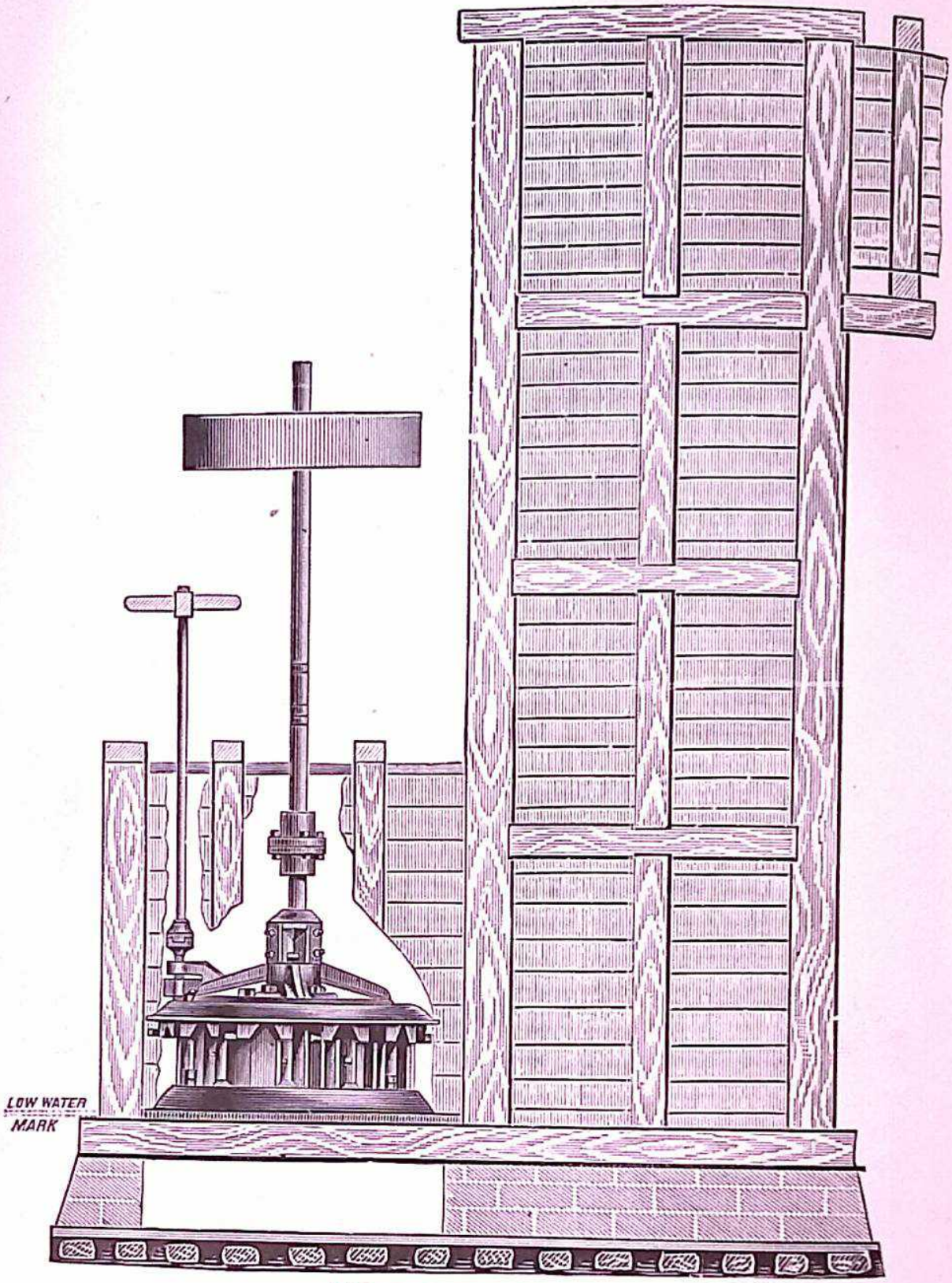
This being the fact, when a water wheel is represented by its builder to discharge 100 inches of water, he does not desire that the public shall infer that the apertures or openings through his wheel only aggregate 100 square inches, but he wishes the public to understand, (and those versed in the science of hydraulics will understand,) that his wheel is so built that the discharge of water through it per minute is equal to the discharge of water through an unobstructed aperture under any given head of pressure per minute. In one of our wheels, if it is claimed that the discharge is 100 square inches, the combined area of its apertures will not measure less than 180 square inches.

Under a head of 20 feet an aperture of 100 square inches will, if not obstructed, discharge 1056 cubic feet of water per minute. Now, if you find a water wheel, the combined or aggregate opening in which is but 100 square inches, and the builder claims for it that it uses 1056, or anything like 1000 cubic feet of water, then let the wheel alone, for it will be of little use to you. It will use a great deal of water and give but little power.

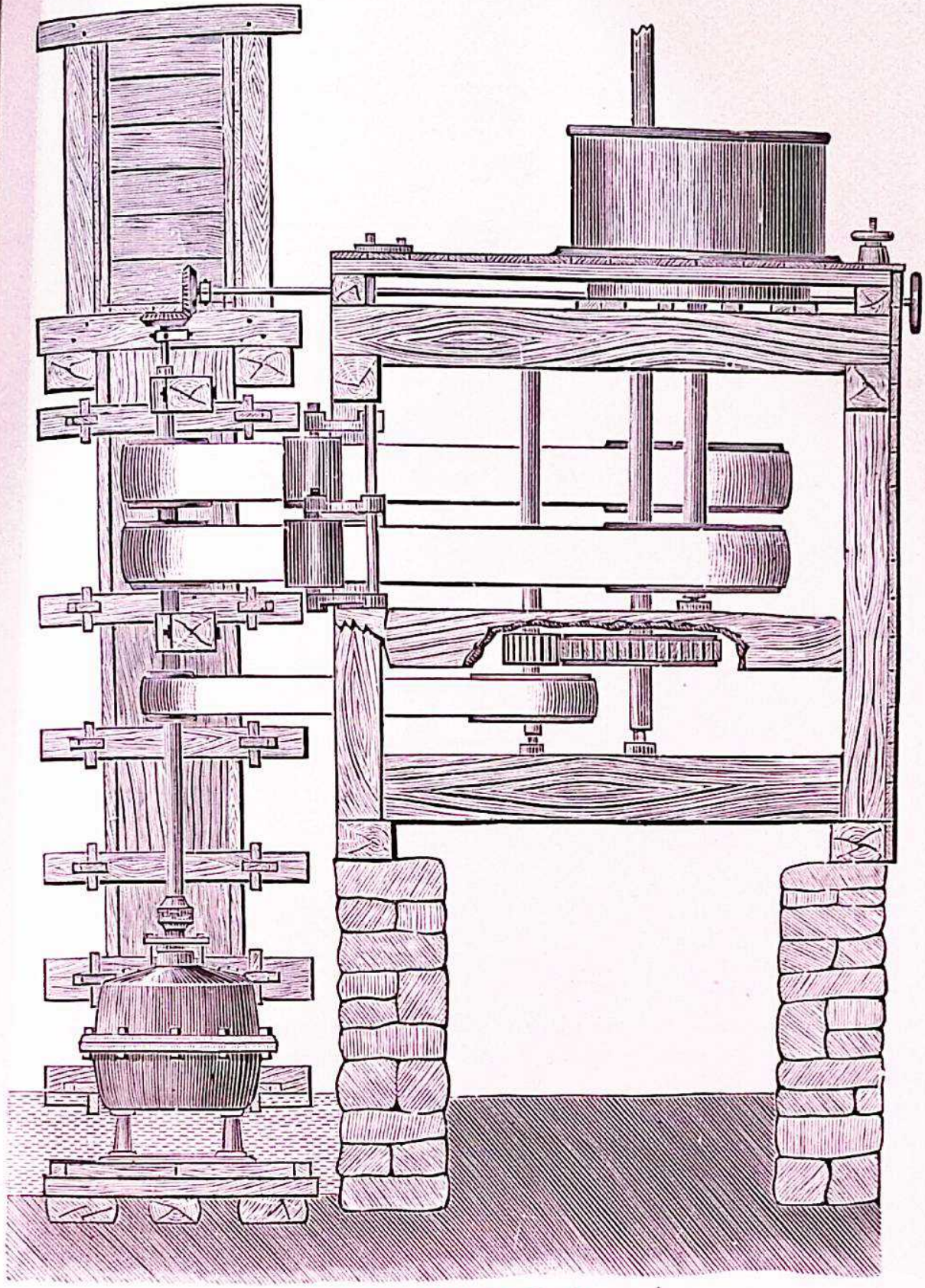
Water, to exert power, must meet with resistance, and when resisted the rapidity of its flow will be checked in proportion to the nature and extent of the resistance put in its way. The water wheel therefore, which does not check the flow of water through it is good for nothing but to vent water; and the chutes and bucket-openings through such a wheel would be more serviceable in connection with a fire hose than with a *grist* or *saw mill*. Such wheels, instead of being called Turbine water wheels, should be called *spouters*.



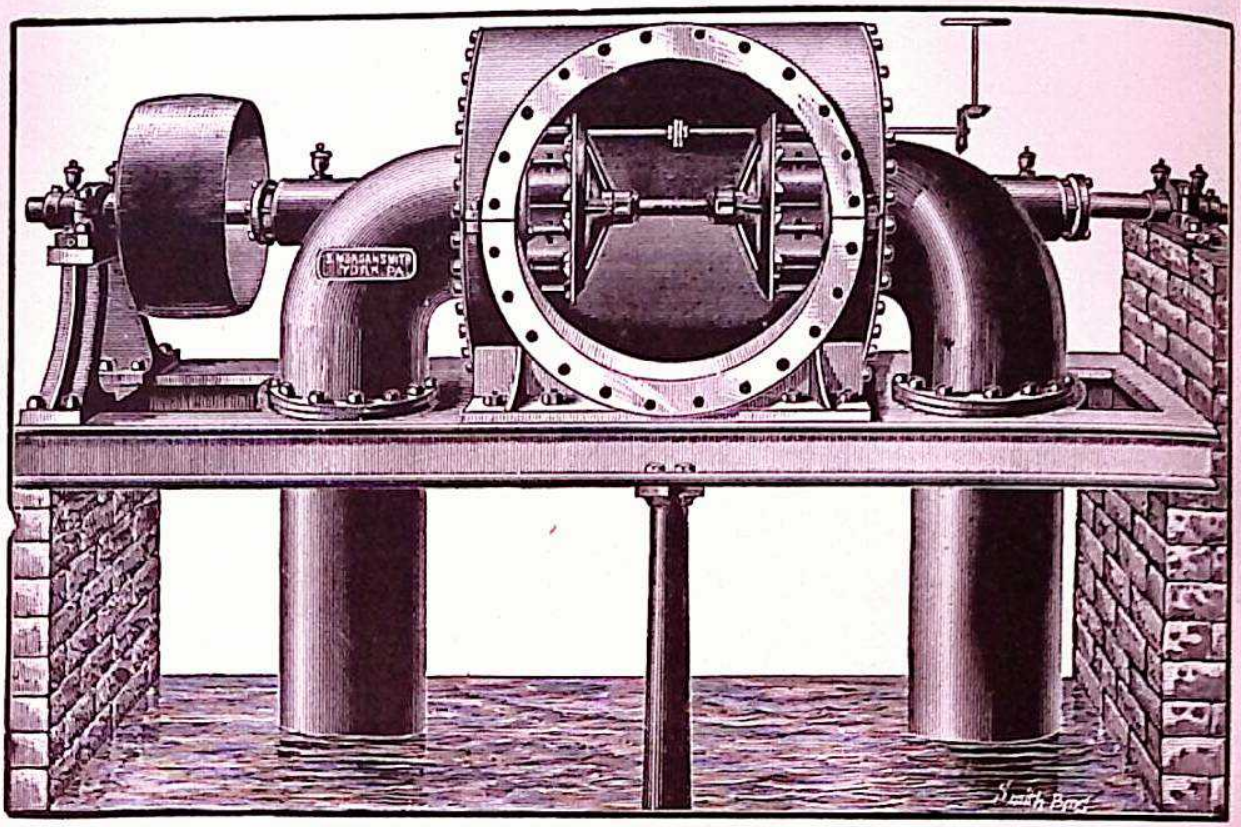
ENGRAVING No. 5.



ENGRAVING No. 6.



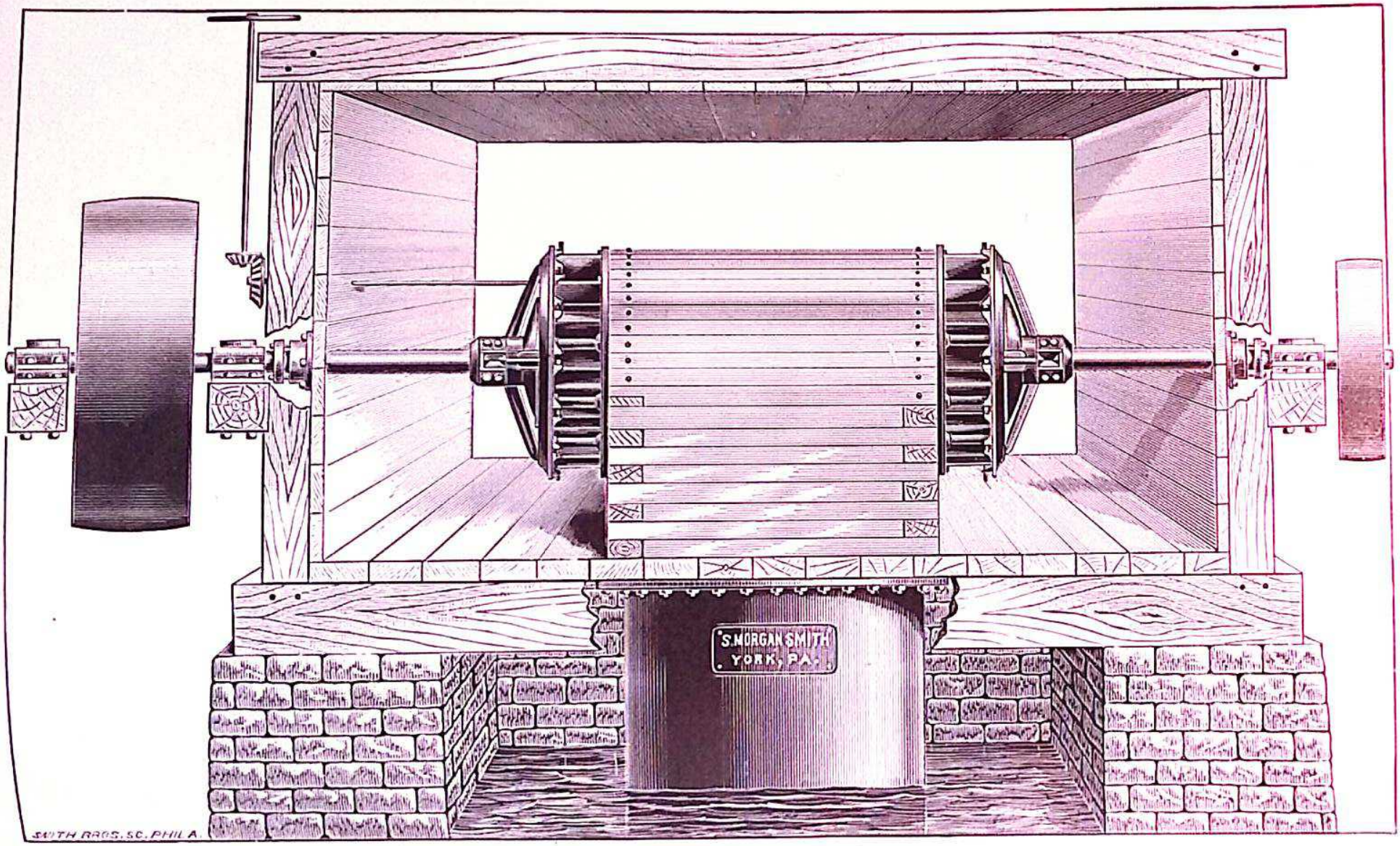
ENGRAVING No. 7.



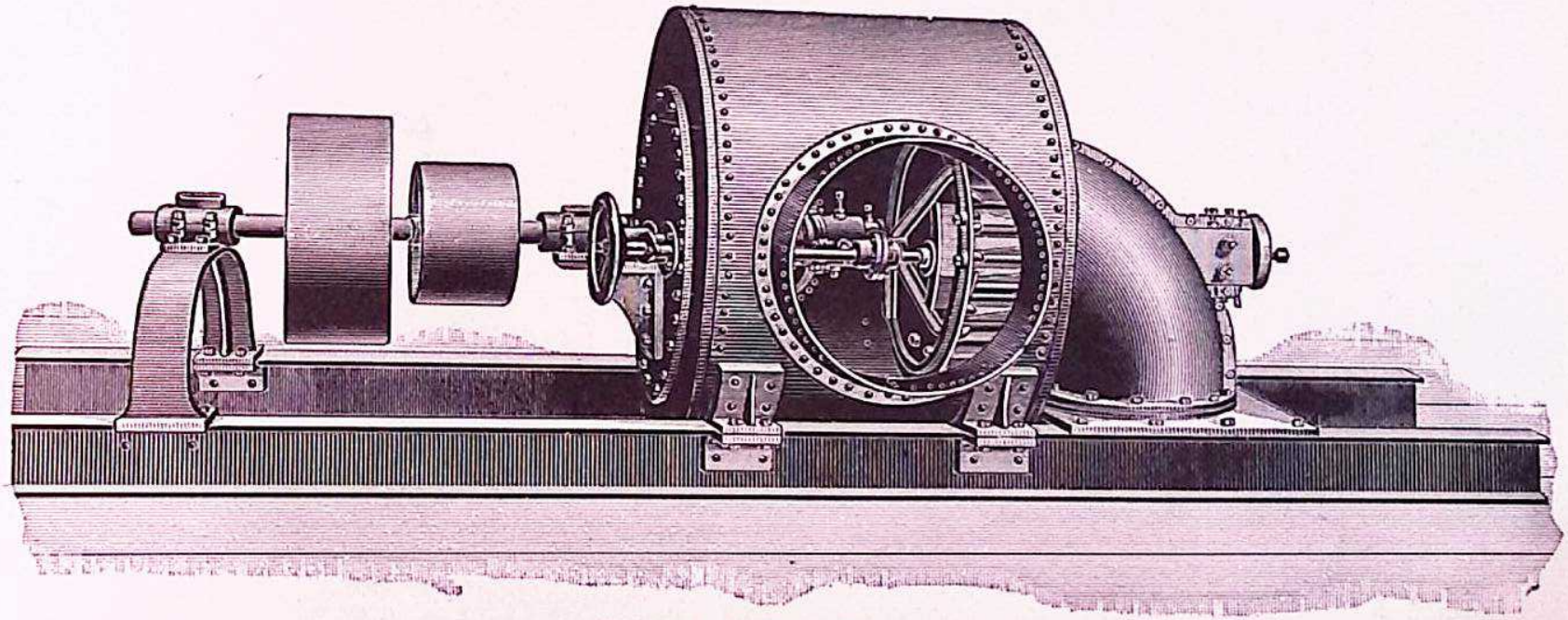
ENGRAVING No. 8.

Engraving No. 8 represents two Success Turbines on horizontal shaft in outer iron case, with draft tubes. The case and draft tubes are supported by steel girders spanning the wheel pit. Instead of steel girders, wood may be used at less expense, although the steel is preferable.

This method of transmitting the power of water wheels is especially adapted to high heads, where the speed and power are so great as to necessitate heavy and expensive machinery if used in the ordinary vertical position.

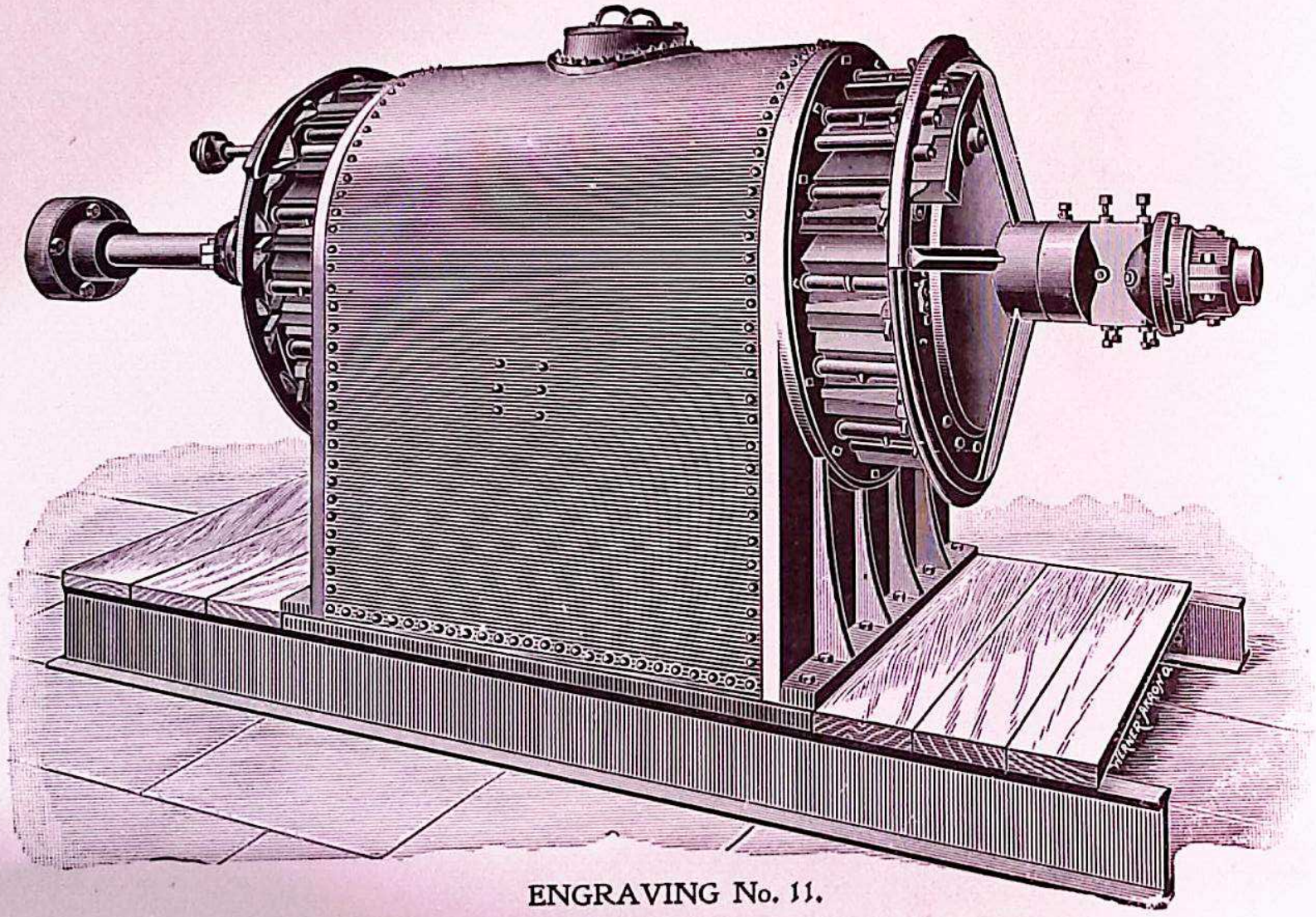


ENGRAVING No. 9.

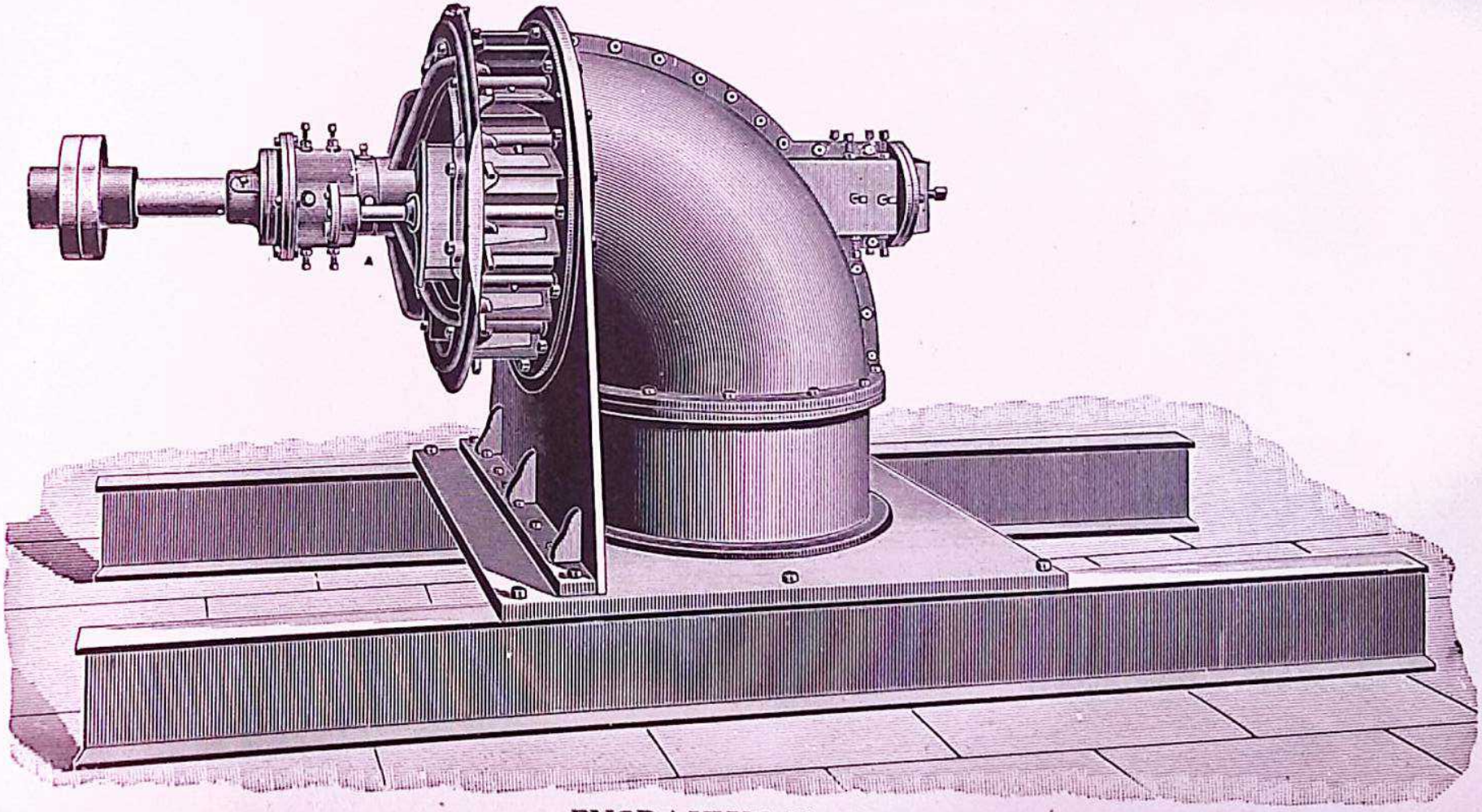


ENGRAVING No. 10

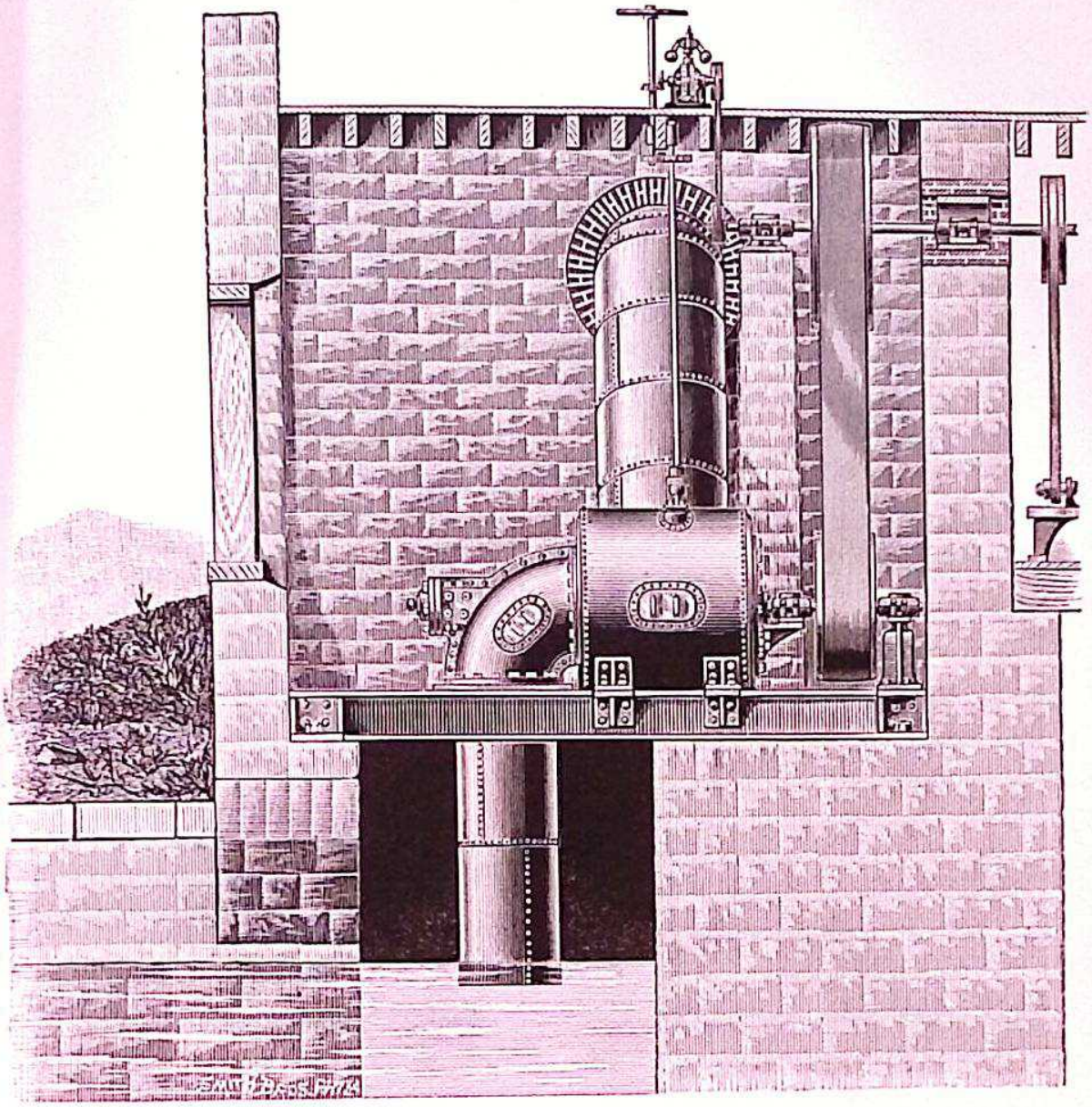
Represents a single Success Turbine on horizontal shaft in iron case, discharging into cast iron quarter turn elbow. Power is taken off on one end by pulleys. Water is conveyed to wheel through a steel pipe which enters at side of case. The whole outfit is mounted substantially on steel girders which span the wheel pit. End thrust is taken off by an improved thrust bearing.



ENGRAVING No. 11.

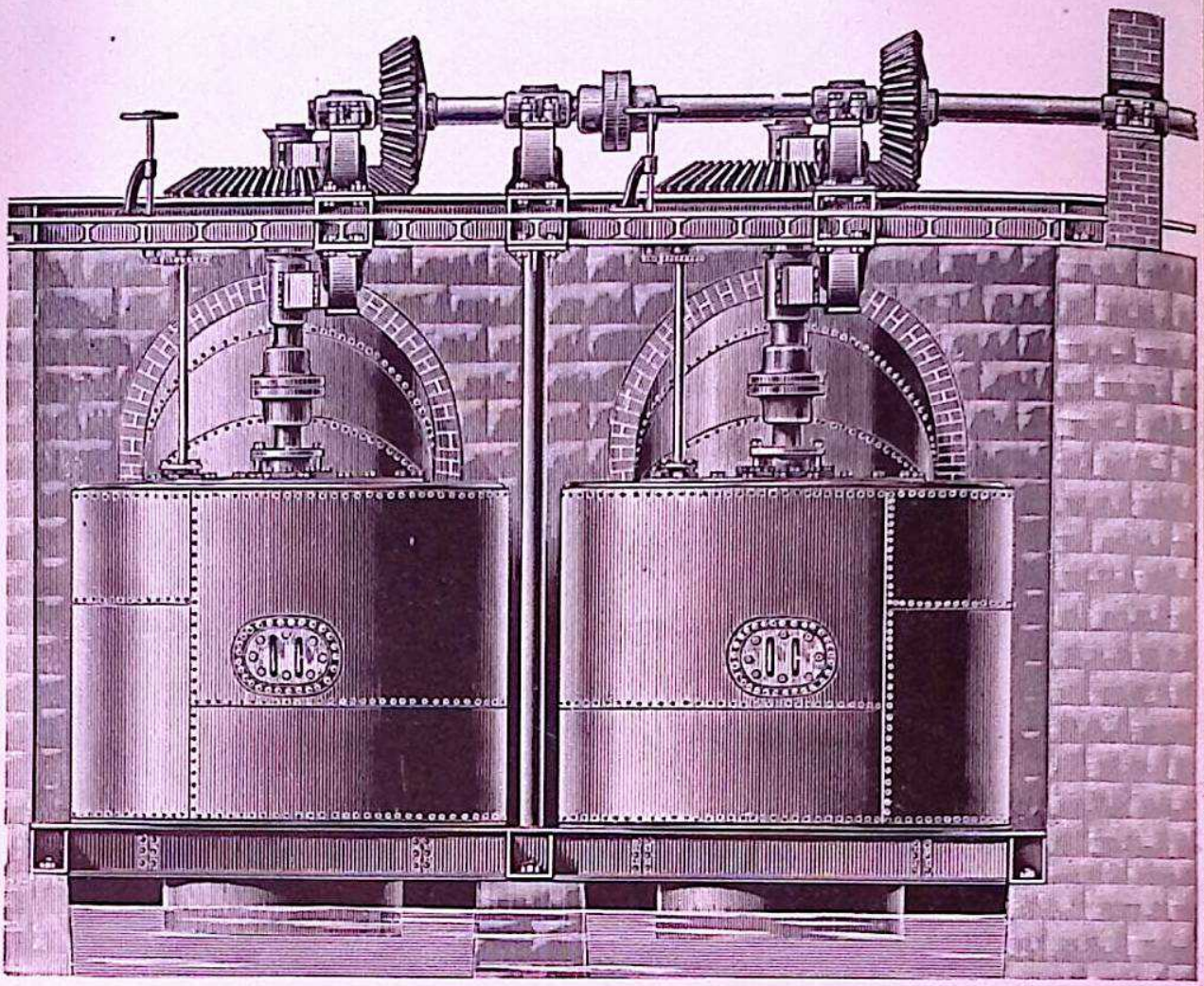


ENGRAVING No. 12.



ENGRAVING No. 13.

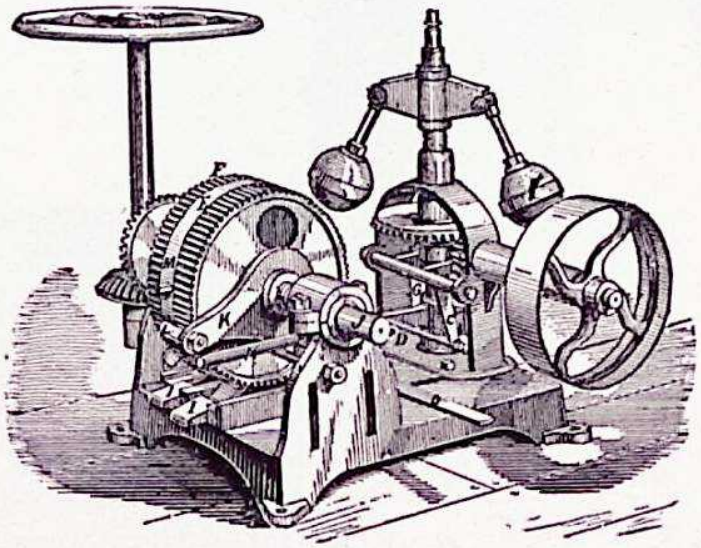
Single Horizontal Turbines may be mounted in this style for driving many different kinds of machinery.



ENGRAVING No. 14

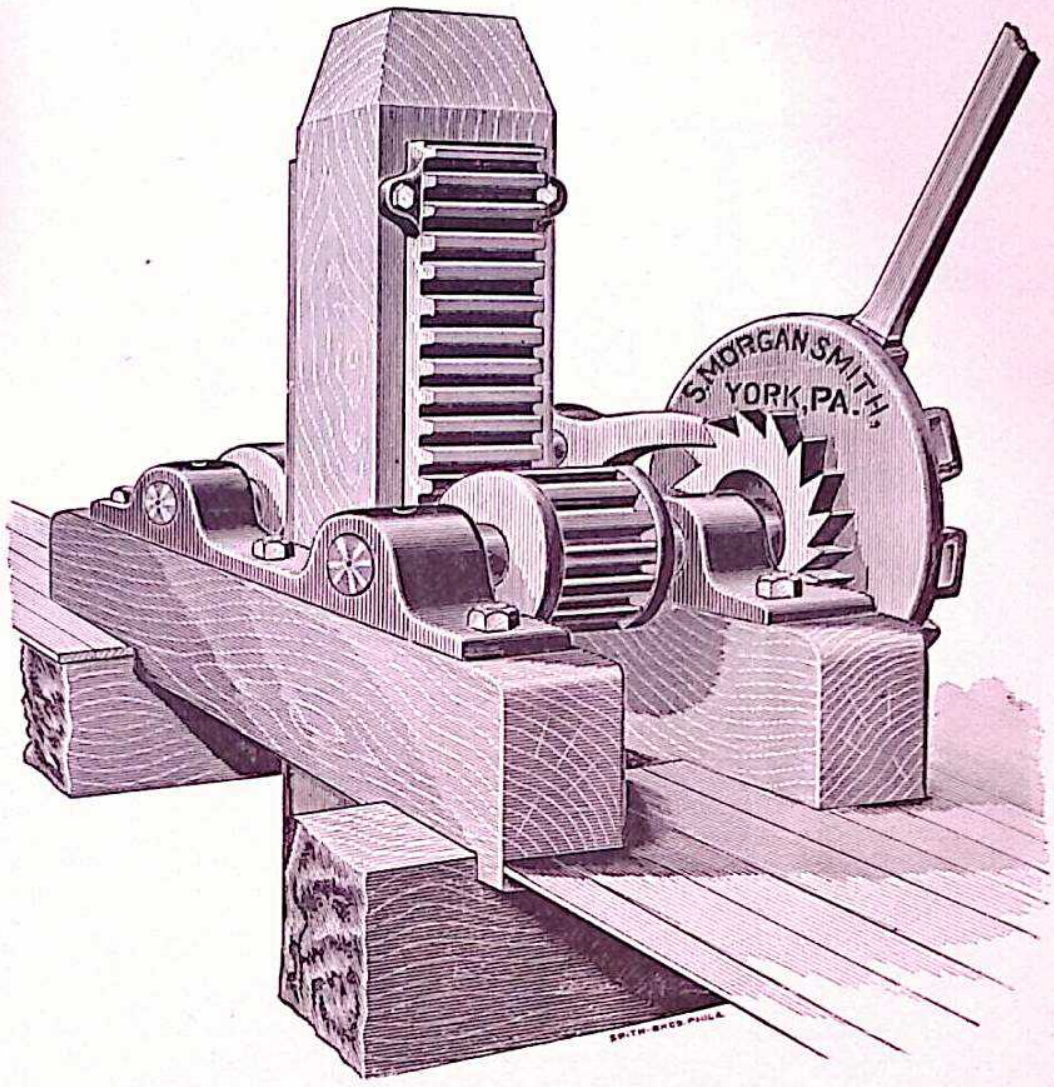
Represents two large Verticals Shaft Turbines in iron cases driving Paper Mill.

WATER WHEEL GOVERNOR.



DIRECTIONS FOR SETTING UP.

The above cut represents a double-acting Water Wheel Governor as it is usually attached to the gate of a wheel. The driving pulley makes 160 revolutions per minute when running at speed and can be driven from any convenient shaft driven by the wheel, usually the jack shaft. It makes no difference which way the driving pulley turns. The top of the ratchet F turns toward the balls to open the gate and must be geared to make from three to eight turns to open the gates full from the time the gate is closed until fully open. The bevel gear shown on the gate stem or hand wheel shaft will have to be placed sometimes below and sometimes above the bevel gear J on the regulator in order to turn the gate the right way. K is a nut with an arm carrying a pin which comes under a lug in the shield E and designed for a stop motion, otherwise to stop the action of the pawls, which operate to open the gate when the gate is fully open. This nut K must be brought against the shoulder when the gate is open, then slip the bevel gear on the gate stem into mesh with the gear J on the regulator. These gears are always left in mesh with each other. They must be keyed, and in no case fastened with screws, which are liable to slip, and thereby disarrange the stop motion, which should be always ready to act in case of low water, or if the wheel should run below speed from any cause when the gate is fully open. The stand bolted on the side of the regulator is designed to form a bearing for the gate stem at the gears. The lever O operates a slide which is to detach the pawls from the ratchet, when the gate is to be operated by hand, to start and stop the wheel; throw the end of this lever as far as possible toward the driving pulley to detach the pawls, and in the opposite direction when the regulator is to operate. The lever N is part of a friction brake, and must have weight enough placed on it to retain the ratchet in the position where the pawls place it. If the brake needs much weight it would be well to take the weight off when the gates are to be operated by hand. When setting the regulator throw out the pawls by means of lever O, then the ratchet is free to turn by hand. A proper foundation is always desirable. If the regulator cannot be placed as represented, common sense will suggest a method.

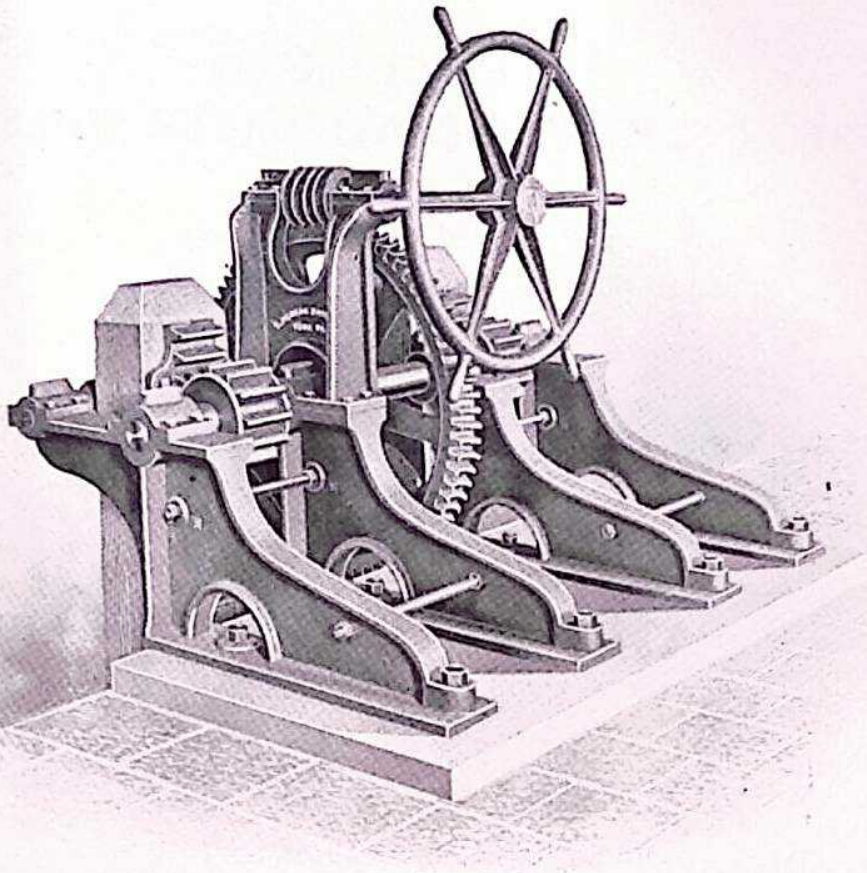


ENGRAVING NO. 15.

GATE HOISTING DEVICE.

The above represents a cheap, but strong and effective gate hoisting device. All head gates should be provided with suitable devices for raising and lowering the gates. For ordinary gates the device as shown above will answer every purpose. As will be observed from the engraving, there is a heavy spur pinion working into the rack segment which is bolted to the gate stem. The pinion and roll shafts are held firmly in position by means of journals cast in connection with heavy plates securely bolted to wooden frame.

When ordering, give size of gate, the height it is to be raised and the depth of water in front of it.



ENGRAVING No. 16.

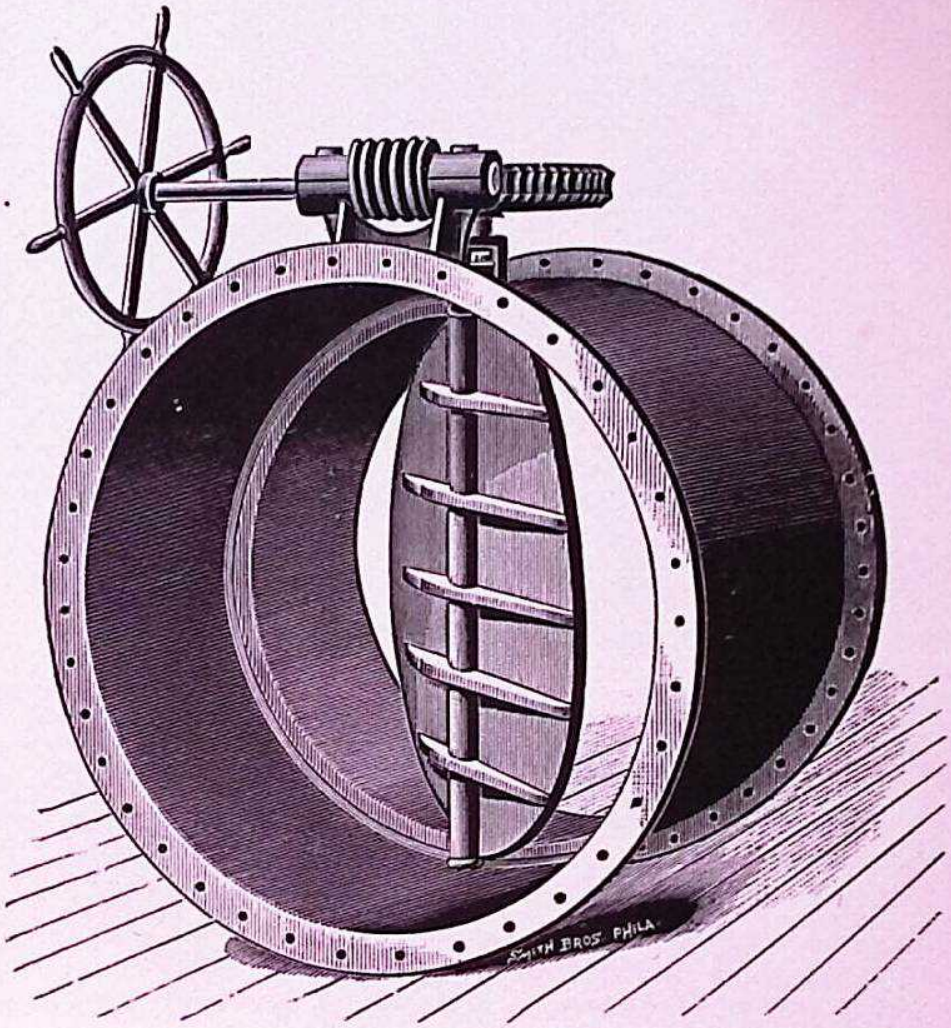
WORM GEARING FOR OPERATING BULK HEAD GATES.

The above represents a powerful double stem worm gear hoist for raising large gates in front of supply pipes to turbines. As will be seen there are two gate stems attached to the gate, to which are bolted rack segments, engaged by pinions keyed to the shaft operated by the worm wheel.

We build many different sizes and styles of head gate hoists, but those shown by engravings Nos. 15 and 16 are most generally used.

When ordering, give size of gate, the height it is to be raised and the depth of water in front of it.

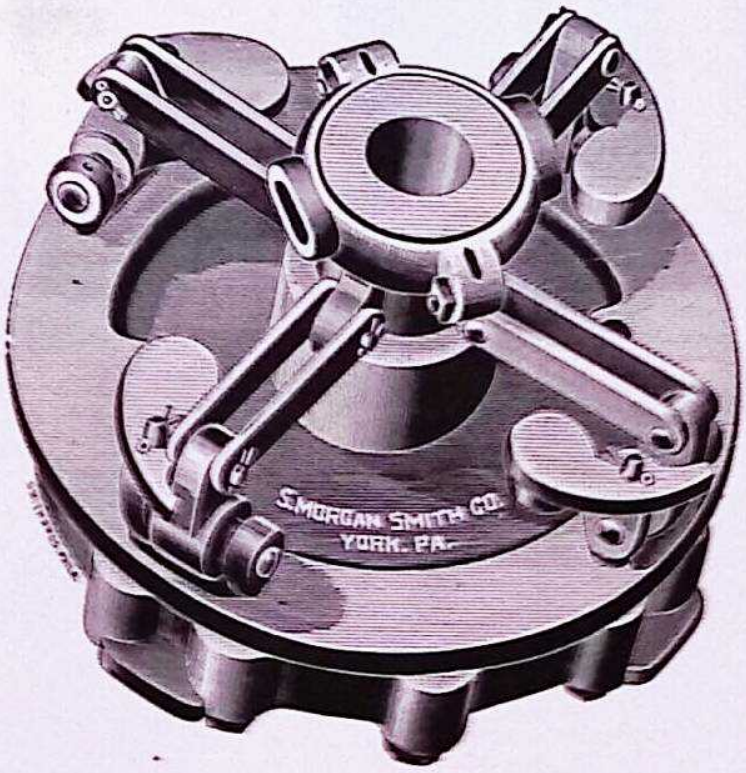
WICKET GATES
FOR SUPPLY PIPES TO WATER WHEELS.



The above style of gate will be found very convenient for many places. We are prepared to furnish Gates of any size to meet requirements.

WORRALL FRICTION COUPLING.

SIMPLE, DURABLE AND RELIABLE.

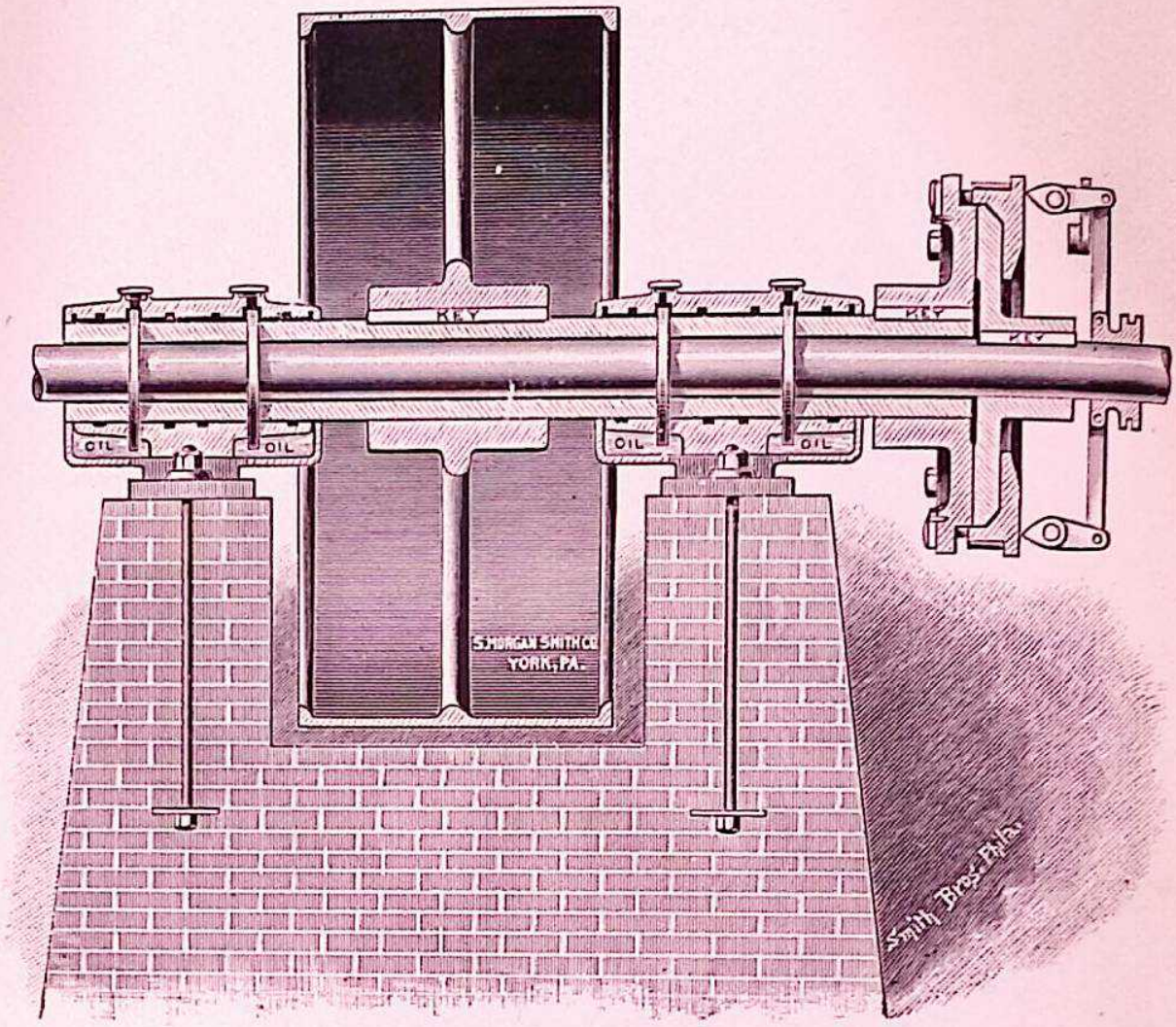


The Worrall Friction Clutch is made in sizes to transmit from one to twenty-five hundred horse power. It automatically centers and adjusts itself. Will work exposed to frost, steam, acids and water.

Each part of the Friction is keyed solid to shaft upon which it runs. The power is not transmitted through bolts, loose joints nor working parts, but directly through parts keyed to the shafts, making practically a solid coupling.

The Clutch is positive and will gradually start or stop any connected shafting and machinery without sudden strain upon belts or gears. See price list page 55.

FRICTION CLUTCH AND QUILL PULLEY.



The above represents a Worrall Friction Clutch connecting line shaft with a Quill or Hollow shaft carrying pulley. Where practicable we advise this arrangement of Clutch and Pulley and especially when pulleys are large and heavy belts are to be used.

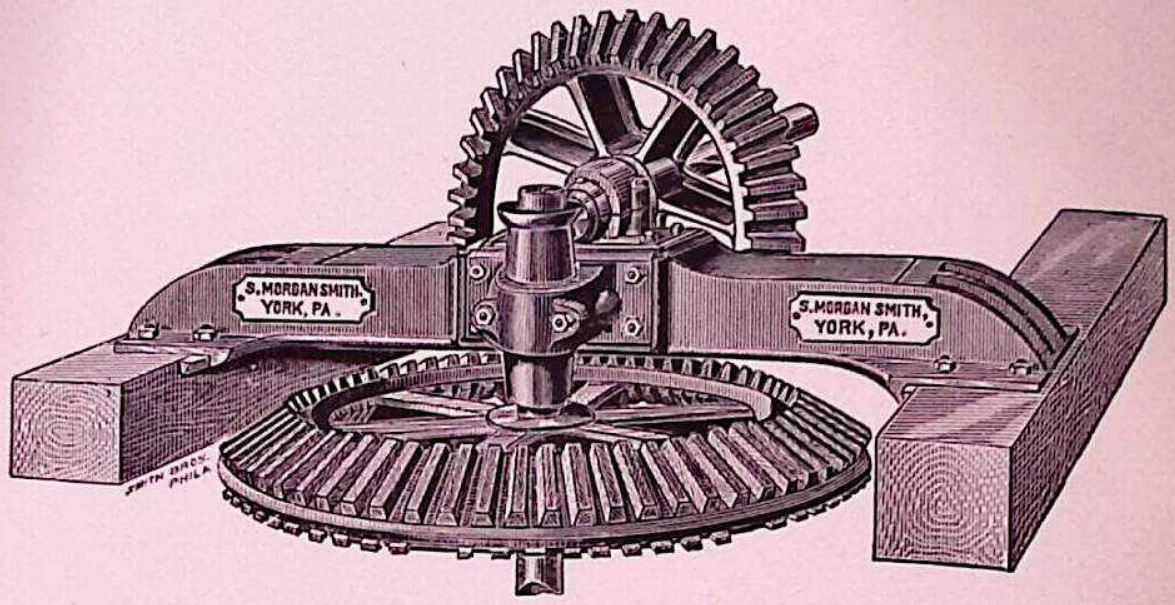
Prices quoted on application.

Price of Worrall Friction Clutches.

Size of Clutch.	Horse Power at 100 Rev.	Space on Shaft for Coupling & Shipper.	PRICE.	Price of Shipper Forks.
6	2	7 inches.	$30.	$2.50
8	2½	8 "	40.	2.75
9	3	10 "	50.	3.50
10	5	12 "	65.	4.00
12	8	18 "	100.	4.50
13½	12	18 "	125.	5.00
15	18	20 "	150.	5.50
18	30	22 "	175.	6.00
21	50	24 "	200.	6.50
24	75	24 "	300.	7.50
27	125	26 "	350.	8.00
30	150	28 "	400.	9.00
33	200	30 "	450.	10.00
36	250	32 "	500.	11.00
42	385	34 "	650.	12 00
48	560	42 "	800.	14.00
54	735	48 "	1000.	16.00
60	1000	52 "	1500.	20.00

Clutches with Bronze and Self Oiling Bushings will be charged extra. In ordering clutches, specify diameter and speed of shafting, and power clutch is required to carry.

Truss and Bevel Mortise Wheels.

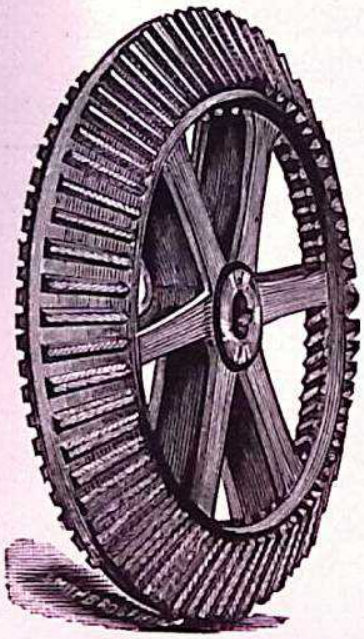


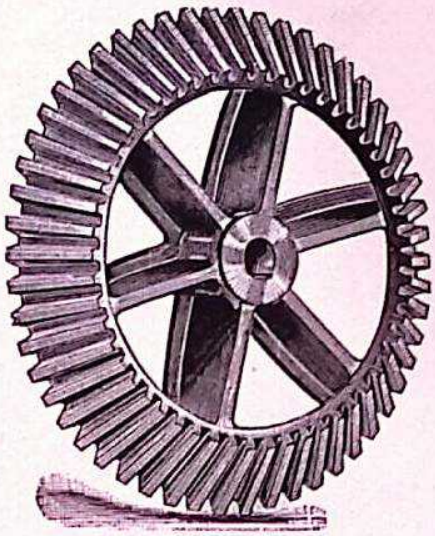
The above shows one of our straight iron trusses, supporting a heavy pair of bevel mortise gears. It is securely bolted to timbers, and prevents the wearing of the cogs occasioned by the too light and often poorly constructed wooden bridgetrees.

We are prepared to furnish complete outfits of gears and trusses, arranged to rest on timber or steel girders, for transmitting any desired power.

Our facilities for the manufacturing of heavy power transmitting machinery are unsurpassed.

We make a specialty of heavy cut gearing and with machinery especially adapted for the purpose, we are prepared to furnish a superior class of work with an unusual degree of promptness.





BEVEL MORTISE WHEELS AND PINIONS.

No. of Pattern	Diameter.	No. of Cogs.	Pitch.	Face.	Backing.	Weight.	Proportion.
†233	9.7 02/100	74	4½	15	15¼	6300	1 to 2.741
	3.2 76/100	27	4½	15	3	3000	
†234	7.1 98/100	60	4½	15	11	4650	1 to 2.4
	2 11 90/100	25	4½	15	4	1760	
†235	7.1 98/100	60	4½	15	11	4875	1 to 1.765
	4.0 77/100	34	4½	15	4	2485	
†248	8.3 33/100	78	4	14	13½	5850	1 to 2.6
	3.2 2/100	30	4	14	2	1700	
†249	10.0 97/100	95	4	16	19	8550	1 to 2.969
	3.4 81/100	32	4	16	2	2195	
†250	7 0 6/100	66	4	16	13½	4954	1 to 2.64
	2.7 85/100	25	4	16	3	1405	
†251	5.6 7/10	52	4	14	12½	3840	1 to 1.49
	3 8 56/100	35	4	14	4½	2110	
†252	7.0 6/100	66	4	12	12	4225	1 to 3.0
	2.4 1/10	22	4	12	2	850	
†253	5.11 34/100	56	4	12	14½	3400	1 to 1.555
	3.9 90/100	36	4	12	6	1925	
†254	6.6 98/100	62	4	12	14⅜	3790	1 to 2.48
	2.7 85/100	25	4	12	14¼	1235	
†255	7.7 70/100	72	4	14	12	4650	1 to 2.483
	3.1 27/100	29	4	14	3½	1640	

See page 62 for price list for filling and cutting gears.

BEVEL MORTISE WHEELS AND PINIONS—Continued.

No. of Pattern	Diameter.	No. of Cogs.	Pitch.	Face.	Backing.	Weight.	Proportion.
†256	7.11 61/100	75	4	14	12	5150	1 to 2.027
	3.11 17/100	37	4	14	3½	2250	
†257	6.1 88/100	58	4	12	7	3350	1 to 1.933
	3.2 27/100	30	4	12	5	1350	
†258	4.0 44/100	38	4	14	7	2175	1 to 1.118
	3.9 35/100	34	4	14	5	1560	
†259	4.2 98/100	40	4	14	7	2310	1 to 1.026
	4.1 78/100	39	4	14	11	Mr 2180	
319	8.2	88	3½	14	14 5/8	5060	1 to 3.384
	2.5	26	3½	14	1 3/8	900	
320	6.11 38/100	75	3½	14	14½	3775	1 to 2.5
	2.9 43/100	30	3½	14	1½	1100	
†324	5.11½	64	3½	12	12½	3075	1 to 2.782
	2.1¾	23	3½	12	2½	798	
325	5.6⅞	60	3½	12	10	2460	1 to 2.069
	2.8⅜	29	3½	12	2½	940	
†326	5.9 10/100	62	3½	12	10½	2920	1 to 2.138
	2.8 47/100	29	3½	12	3½	1080	
†327	4.5 52/100	48	3½	12	8⅝	2125	1 to 1.263
	3.6 39/100	38	3½	12	5	1475	
†328	5.4 65/100	58	3½	12	9	2700	1 to 1.812
	2.1 76/100	32	3½	12	3	1250	
†329	5.6 88/100	60	3½	12	8	3700	1 to 1.5
	3.8 60/100	40	3½	12	5½	1800	
†336	6.8 71/100	78	3¼	11	11½	3390	1 to 2.689
	2.6 6/100	29	3¼	11	3	965	
†337	6.8 71/100	78	3¼	11	12½	3325	1 to 2.44
	2.9 15/100	32	3¼	11	3	1160	
340	4.3½	54	3	14	8½	1320	1 to 1.149
	3.8¾	47	3	14	5	1155	
341	4.3 6/10	54	3	12	7⅞	1595	1 to 1.636
	2.9 7/10	35	3	12	3	870	
†342	4.3 6/10	54	3	12	7⅞	1750	1 to 1.41
	3.1 28/100	39	3	12	3½	1080	
†343	6.0	76	3	10	9	2240	1 to 2.923
	2.0 80/100	26	3	10	2	635	
344	5.3 1/10	66	3	10	9⅝	1890	1 to 1.886
	2.9 7/10	35	3	10	2¼	750	
345	5.0 3/10	63	3	10	9½	1600	1 to 3.0
	1.8 1/10	21	3	10	1½	360	
†346	3.6 5/100	44	3	10	4½	1100	1 to 1.023
	3.5 10/100	43	3	10	3	1025	

See page 62 for price list for filling and cutting gears.

BEVEL MORTISE WHEELS AND PINIONS.—Continued.

No. of Pattern	Diameter.	No. of Cogs.	Pitch.	Face.	Backing.	Weight.	Proportion.
347	5.8 78/100	72	3	12	9 3/8	2260	1 to 2.88
	1.11 93/100	25	3	12	1 5/8	590	
†348	3.9 87/100	48	3	12	6 1/2	1530	1 to 1.09
	3.6 5/100	44	3	12	4 1/4	1240	
349	3.11 3/4	50	3	10	7	1270	1 to 1.25
	3.2 2/16	40	3	10	3 1/2	875	
†351	5.8 3/4	72	3	10	9 1/4	2225	1 to 1.756
	3.3 3/16	41	3	10	2 3/4	1100	
353	6.2 1/2	78	3	8	9 1/2	1836	1 to 2.0
	3.1 1/4	39	3	8	5	688	
354	5.7 82/100	71	3	9	10 1/4	1778	1 to 3.737
	1.6 23/100	19	3	9	1 7/8	350	
370	6.8 1/2	88	2 7/8	6 1/4	9 1/2	1112	1 to 4.4
	1.6 1/4	20	2 7/8	6 1/4	2 1/2	224	
371	7.7 1/2	104	2 3/4	10	12 3/4	2870	1 to 3.466
	2.2 1/2	30	2 3/4	10	1 3/4	684	
†372	3.11 3/10	54	2 3/4	10	7	1280	1 to 1.038
	3.9 55/100	52	2 3/4	10	4	1140	
†373	5.3 1/14	72	2 3/4	9	8 1/4	1750	1 to 2.057
	2.6 5/8	35	2 3/4	9	2 1/8	725	
†374	2.5 80/100	34	2 3/4	8	6 1/4	448	1 to 1.36
	1.9 94/100	25	2 3/4	8	3	346	
380	7.00	96	2 3/4	8	11 1/4	2125	1 to 3.43
	2.0 1/2	28	2 3/4	8	7/8	425	
*383	6.11	96	2 3/4	6	10 1/4	1720	1 to 4.8
	1.5 1/2	20	2 3/4	6	3/4	340	
*384	6.4	88	2 3/4	7	9 3/4	1675	1 to 2.93
	2.2 1/4	30	2 3/4	7	2 1/2	435	
*400	3.0 1/2	44	2 5/8	7 1/2	5 3/4	570	1 to 1.048
	2.11	42	2 5/8	7 1/2	4	550	
†407	5 6 22/100	83	2 1/2	8	9	1600	1 to 2.515
	2.2 30/100	33	2 1/2	8	2 3/8	485	
†408	5.0 50/100	76	2 1/2	8	11	1550	1 to 2.923
	1.8 74/100	26	2 1/2	8	1 1/2	415	
†409	5.0 50/100	76	2 1/2	8	8 1/2	1380	1 to 2.815
	1.9 53/100	27	2 1/2	8	2	315	
410	5.11 5/8	90	2 1/2	8	9 3/4	1525	1 to 2.0
	2.11 13/16	45	2 1/2	8	2 5/8	650	
†411	3.11 3/4	60	2 1/2	9	6	1210	1 to 1.5
	2.7 13/16	40	2 1/2	9	2 1/2	620	
412	3.11 3/4	60	2 1/2	8	7	715	1 to 2.222
	1.9	27	2 1/2	8	1 5/8	310	

See page 62 for price list for filling and cutting gear.

BEVEL MORTISE WHEELS AND PINIONS—Continued.

No. of Pattern	Diameter.	No. of Cogs.	Pitch.	Face.	Backing.	Weight.	Proportion.
413	3.6 7/8	54	2 1/2	4	6	378	1 to 2.842
	1.3 1/8	19	2 1/2	4	1 1/2	88	
†414	3.11 3/4	60	2 1/2	8	6 1/2	1015	1 to 1.875
	2.1 1/2	32	2 1/2	8	2 1/2	460	
*415	7.9	120	2 1/2	6 1/2	10	2100	1 to 3.077
	2.6 1/4	39	2 1/2	6 1/2	3	385	
*416	6.6	102	2 1/2	7	10 1/2	1320	1 to 2.62
	2.6	39	2 1/2	7	2 3/4	360	
†428	4.0	67	2 1/4	7	6 1/2	784	1 to 2.66
	1.5 95/100	25	2 1/4	7	1 1/2	235	
429	2.11 13/16	50	2 1/4	8	4 1/4	500	1 to 1.163
	2.6 5/8	43	2 1/4	8	1 3/4	400	
†430	4.0 3/4	68	2 1/4	8	6	970	1 to 2.0
	2.0 3/8	34	2 1/4	8	1 5/8	365	
431	5.0 1/8	84	2 1/4	5	7	686	1 to 2.0
	2.6	42	2 1/4	5	1 3/4	372	
432	4.0	67	2 1/4	5 1/4	6 1/2	505	1 to 3.722
	1.0 7/8	18	2 1/4	5 1/4	1	85	
†433	2.11 15/16	50	2 1/4	8	4 1/4	625	1 to 1.02
	2.11 1/16	49	2 1/4	8	3 1/8	575	
†434	2.3 1/4	38	2 1/4	7	2 3/8	330	1 to 1.0
	2.3 1/4	38	2 1/4	7	3 5/8	300	
†435	2.11 3/4	50	2 1/4	8	4 1/2	575	1 to 1.428
	2.1 3/16	35	2 1/4	8	2 3/4	355	
†436	2.10 7/8	48	2 1/4	7	4 1/8	512	1 to 1.2
	2.4 5/8	40	2 1/4	7	2 1/2	382	
438	5.5 7/8	92	2 1/4	6	7 1/2	1030	1 to 1.957
	5.9 11/16	47	2 1/4	6	2	455	
†446	2.11 67/100	56	2	6	7	510	1 to 2.074
	1 5 23/100	27	2	6	1 3/4	180	
†447	2.11 67/100	56	2	6	5 1/2	458	1 to 1.514
	1.11 58/100	37	2	6	2 3/8	254	
448	4.5 7/16	84	2	6	7 1/4	825	1 to 3.111
	1.5 3/16	27	2	6	1 1/2	160	
†449	1.8 3/8	32	2	6	3 1/2	163	1 to 1.032
	1.7 3/4	31	2	6	2 1/2	135	
†450	1.5 82/100	28	2	5	3 1/2	120	1 to 1.0
	1.5 82/100	28	2	5	2 1/2	130	
†451	3.7 31/100	68	2	5	6 1/4	670	1 to 4.0
	10 88/100	17	2	5	1/2	85	
452	2.6 1/2	48	2	6	5	230	1 to 2.087
	1.2 5/8	23	2	6	5/8	105	

See page 62 for price list for filling and cutting gear.

BEVEL MORTISE WHEELS AND PINIONS—Continued.

No. of Pattern	Diameter.	No. of Cogs.	Pitch.	Face.	Backing.	Weight.	Proportion.
†453	2.1 1/2	40	2	6	3 3/8	230	1 to 1.081
	1.11 1/2	37	2	6	2 1/8	180	
454	2.6 9/16	48	2	6	3 1/2	250	1 to 1.02
	2.5 15/16	47	2	6	2 5/8	240	
455	4.0 3/8	76	2	6	5 1/2	510	1 to 1.948
	2.0 3/16	39	2	6	1 7/8	245	
*456	6.0 3/4	114	2	6	9	950	1 to 2.0
	3.0 1/4	57	2	6	3 1/2	425	
457	5.10 4/100	110	2	6	9 1/4	1150	1 to 5.0
	1 2 5/8	22	2	6	3/4	95	
458	2.4	44	2	5	4 1/4	250	1 to 1.419
	1.7 3/4	31	2	5	2 5/8	140	
*475	3.0	60	1 7/8	5 1/2	4 1/2	300	1 to 1.621
	1.10 1/4	37	1 7/8	5 1/2	2 5/8	200	
480	2.0 1/2	44	1 3/4	5	3 7/8	150	1 to 1.913
	1.0 13/16	23	1 3/4	5	1	65	
481	2.7 3/16	56	1 3/4	5	3 7/8	190	1 to 1.272
	2 0 1/2	44	1 3/4	5	2 1/2	155	
482	5.0	108	1 3/4	6	6 3/4	714	1 to 2.0
	2.6 1/4	54	1 3/4	6	3 1/8	275	
*483	5 0	108	1 3/4	6 1/2	6 1/8	745	1 to 1.714
	2.11 1/4	63	1 3/4	6 1/2	2 3/8	340	
*484	5 0	108	1 3/4	4 1/2	6 1/4	560	1 to 2.77
	1 9 3/4	39	1 3/4	4 1/2	2 1/8	180	
490	2.6 9/16	64	1 1/2	4 1/2	5/8	150	1 to 4.0
	.7 5/8	16	1 1/2	4 1/2	1/2	40	
*491	1.8 1/4	42	1 1/2	4	3 1/2	90	1 to 2.0
	.10 1/8	21	1 1/2	4	1 1/8	50	
†492	1.3 5/16	32	1 1/2	3 1/2	3 1/2	69	1 to 1.0
	1.3 5/16	32	1 1/2	3 1/2	2	54	
†493	3.3 64/100	83	1 1/2	4	5 1/4	310	1 to 5.928
	.6 74/100	14	1 1/2	4	3/8	40	
†494	1 9 3/16	44	1 1/2	4	4	195	1 to 1.518
	1.3 35/100	29	1 1/2	4	2	90	

See page 62 for price list for filling and cutting gear.

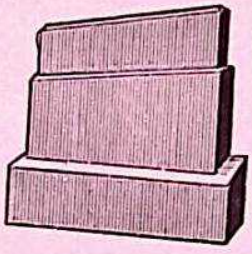
We employ a large force of pattern makers and are continually making new gears. If you do not find what you want in the above list, write us specifying your requirements and we will take pleasure in quoting prices on gears adapted to your location.

MACHINE CUT GEARING.

Among the many large and special tools in our shops is a **Gear Cutting Machine.**

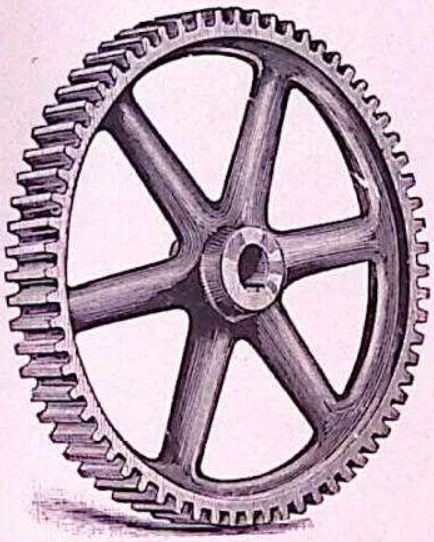
To be able to accommodate our customers with large as well as small cut gearing, we have had Mr. Gleason, the patentee, build for us a machine of special size—being one of the largest he has yet constructed We are therefore prepared to cut spur gearing with iron or wooden cogs of any size wanted, and Bevel and Mitre gearing, wood or iron cogs—as large as 9 feet diameter, and as wide as 24 inches on the face. The machine cuts the cogs to a proper shape, and spaces them to mathematical correctness.

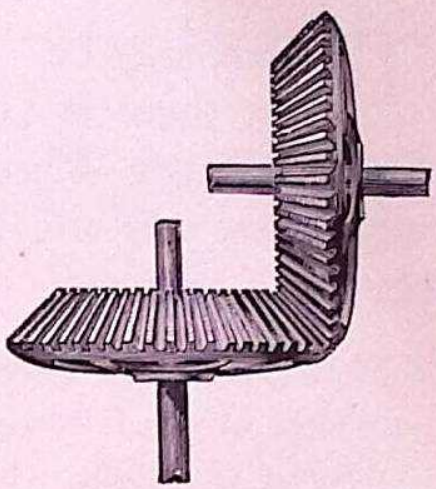
PRICE LIST FOR FILLING AND CUTTING GEARS.



Face of Cogs.	5	6	7	8	9	10	12	14	16
Price of Cogs each,	.12	.14	.16	.18	.20	.25	40	.55	.75
Cogging Mortise Wheels per Cog, including Cog.	.45	.50	.60	.70	.80	.90	1.10	1 30	1.50
Dressing Iron Pinion teeth on both sides, per tooth.	.60	.70	.75	.85	.90	1 05	1.50	1 65	2.20

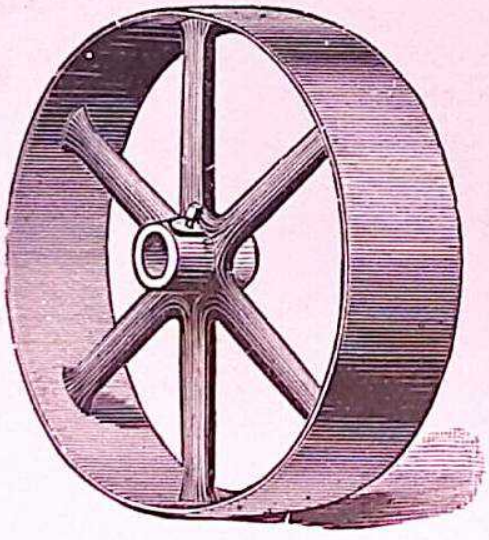
We keep on hand a large and well seasoned stock of Hickory and Maple Cog Wood, and with our improved gear cutting machines can furnish mortise gears of the most approved design.

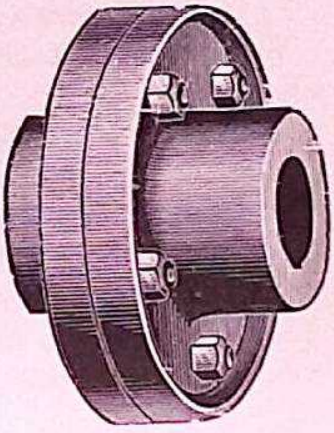




We have a large assortment of Spur, Bevel and Mitre Gear Patterns of latest design, and are prepared to furnish Shafting, Pulleys, Rope Sheaves, Hangers and a general line of Power Transmitting Machinery. Our facilities for manufacturing this class of machinery are of the best.

Write for catalogue of Gearing and Machinery, if interested.





THERE may be "Nothing New under the Sun," but there is Under the Water, and the New Success Water Wheel is that new thing. Try the wheel and you will then only realize this great discovery in science.

That you may be encouraged to make such trial, we have published in the following pages a few names of the many thousands of people who have enjoyed the use of the old Success Wheel, which is known as the "Improved Succes."

The New Success Water Wheel consists of a NEW RUNNER by which the wheel not only gives over 80 per cent. efficiency, but more than doubles the old one in horse power. See tables.

FLOUR MILLS.

Haines, Leard & Smith, Craigsville, Pa., two 24 inch No. 2 wheels.

P. P. Gantt, Scottville, Va., one 18 inch No. 2 wheel.

W. Hiatt, Pilot Mountain, N. C., one 21 and one 18 inch No. 2 wheels

Nimrod F. Dove, Circleville, Pendleton Co., Va., one 11½ inch No. 2 wheel.

Anderson & Coiner, Lynwood, Rockingham Co., Va., one 48 inch No. 2 wheel.

S. C. Koonce, Clark P. O., Mercer Co., Pa., two 48 inch No. 2 wheels.

Aaron Todd, Okoha, Covington Co., Miss., one 21 inch No. 2 wheel.

James Boyd, Harrisburg, Pa., one 21 inch wheel.

William R. Chambers, Flat Creek, Buncombe Co., N. C., one 31 inch wheel.

J. D. Martin, Nacogdoches, Texas, one 21 inch No. 2 wheel.

J. W. Close & Co., Venice, Erie Co., Pa., one 42 inch wheel.

A. S. Beane, Wicomico Church, Northumberland Co., Va., one 18 inch No. 2 wheel.

Geo. W. Laprade, Sago, Pittsylvania Co., Va., one 13 inch No. 2 wheel.

Moffit and Scantleton, Sparta, Monroe Co., Wis., one 21 and one 18 inch wheel.

J. K. Moyer, Centre Mills, Centre Co., Pa., one 24 inch No 2 wheel.

John Prizer, Kimberton, Chester Co., Pa., one 15 inch wheel.

H. J. Yeary, Jonesville, Lee Co., Va., one 30 inch No 2 wheel.

O. Stone, Pulaski City, Pulaski Co., Va., two 21 inch No. 2 wheels.

D. E. Keeney, Graydon, York Co., Pa., one 21 inch No. 2 wheel.

R. E. Hale, Calloways, Franklin Co., Va., two 15 inch wheels.

Jacob Humbrid, Cumberland, Alleghany Co., Md., one 27 inch No. 2 wheel.

Walter Robertson, Pizaro, Floyd Co., Va., one 10 inch wheel.

E. M. Laubauch, Forks, Pa., one 30 inch No 2 wheel.

Andrew Ruff, Troy, N. Y., one 27 inch wheel.

L. E. Holsapple, Bethel, Pa., one 24 inch wheel.

Jacob R. Shaffer, Larue, York Co., Pa., one 36 inch wheel.

Owen & Benett, Brow, Va., two 15 inch wheels.

Dysart & Neal, Marian, N. C., one 36 inch wheel.

M. L Peck, Ernstville, Md., one 24 inch wheel.

G. Frank Morgan, Dulaney's Valley, Md., one 13 inch wheel.

Smith, Lower & Smith, Prairie Lea, Texas, one 66 inch wheel.

Geo. M. Creswell, Pittsburg, Pa., one 36 inch wheel.

Alma Roller Mills, Alma, Mich., one 48 inch wheel.

Graham & Alstadt, Hagan, Minn., one 36 inch wheel.

Tompkins & Wolverton, Wellsville, N. Y., one 42 inch wheel.

Joseph E. Wierman, Mummasburg, Pa., one 18 inch wheel.

D. W. Prosser, Bedford, Pa., two 18 inch wheels.

A. J. Ward, Gliden, N. C., one 36 inch wheel.
W. C. Leonard, Rutland, Vt., one 21 inch wheel.
Griffin & Bittner, Stoyestown, Pa., one 18 inch wheel.
W. B. Spencer, Arcanum, Va., one 18 inch wheel.
E. M. Garey, Denton, Md., one 36 inch wheel.
Thos P. North, Thomasville, N. C., one 15 inch wheel.
B. M. Davidson, Pedlar Station, Va., one 18 inch wheel.
Jones & Townsend, North Fork, Tenn., one 42 inch wheel.
W. H. Wheeler, Sciotoville, O., one 48 inch wheel.
B. F. Bennett, Greenup, Ky., one 39 inch wheel.
J. J. Greaver, Letcher, Bath Co., Va., one 18 inch wheel.
Homer E. Spencer, Starruca, Pa., one 36 inch wheel.
John P. St. Clair, Homer City, Pa., one 36 inch wheel.
Samuel M. Guerrant. Rocky Mountain, Va., one 36 inch wheel.
H. L. Wyson, President Farmers' Alliance Mill Co., Newburn, Pulaski Co., Va., two 21 inch wheels.
A. O. Young & Co., Double Pipe Creek, Md., one 21 inch wheel.
Ben. Hursthal, Ronceverte, W. Va., one 30 inch No. 2 wheel.
W. J Cash, McIrons, Amhert Co., Va., one 13 and one 11½ inch No. 2 wheels.
Robert G. Smith, Embreeville, Chester Co., Pa., one 36 inch No. 2 wheel.
L. M. Plum, Constableville, Lewis Co., N. Y., one 18 inch wheel.
J. F. Deputy, Rockingham, Va., one 15 inch wheel.
Vinton Roller Mills, Vinton, Va., one 30 inch No 2 wheel.
E. Sessler, Troutville, Botetourt Co., Va., one 27 inch No. 2 wheel.
Byrd Huff, Copper Hill, Floyd Co., Va., one 18 inch No. 2 wheel.
Shuford Hardware Co., Hickory, N. C , one 21 inch No. 2 wheel.
R. M. Talbott, Arden, Barbour Co., W. Va., one 36 inch No. 2 wheel.
T. Johnson, Ludlow, Windsor Co., Vt., one 24 inch wheel.
Geo. Gaiser, Greenville, Pa., two 42 inch wheels.
Wm. Dulaney & Co , Dulaney, Va., one 11½ inch wheel.
A. M. Searle, Lowville, N. Y., one 36 inch wheel.
Jos. Stockton, Bloomington, Wis., one 15 inch wheel.

H. B. Shepard, Fort Johnson, N. Y., one 21 inch wheel.
Samuel Polett, Pedingtons, Gap, Va., one 11½ inch wheel.
Shell & Slates, Fremont, O., one 30 inch wheel.
F. McDaniel, Cooperstown, Pa., one 24 inch wheel
S. B. Atwell, Kinsale, Va., one 18 inch wheel.
George Douglass, Oxford, N. Y., one 54 inch wheel.
M. L. Wissel, Onberg, Pa., one 30 inch wheel.
Oswald Tilghman, Easton, Md., one 30 inch wheel.
Tunnell, Stone & Parks, Kenton, Mo., one 48 inch wheel.
Shell & Slates, Fremont, O., one 30 inch wheel.
Silas Pearson, Trigonia, Tenn., one 30 inch wheel.
John H. Monger, North River, Va., one 11½ inch wheel.
Chas. A Brown, Russell, Mass., one 21 inch wheel.
J. W. Hawkins & Sons, Madison C. H., Va., one 24 inch wheel.
E. T. Wade, Topeco, Floyd Co., Va., one 15 inch wheel.
Byron, Wickham & Perry, Stewart, O., one 54 inch wheel.
Leon Von Horn, Richboro, Pa., one 18 inch wheel.
G. W. Blodgett, N Randolph, Vt., one 42 inch wheel.
E. O. Hubbard, Leda, Va., one 21 inch wheel.
A. W. Martin, Goodville, Pa., one 36 inch wheel.
O. T. King, Oldham, Westmoreland Co., Va , one 18 inch wheel.
T. H. Smith, Glenn Allen, Ala., one 30 inch wheel.
W. C. Palmatory, Church Hill, Md , one 21 inch wheel.
B. F. Crumling, Hellam, Pa., one 10 inch wheel.
Oswald & Shook, Arcadia, Neb., one 48 inch wheel.
W. F. Brhant, Mize, Miss., one 24 inch wheel.
W. T. Harper, Hat Creek, Va., one 18 inch wheel.
A. E. Conrad, Lewisville, N. C., one 11½ inch wheel.
F. Lightner, Buckeyestown, Md., one 30 inch wheel.
Elkton Milling Co., Elkton, Va., one 54 inch wheel.
Frederick Shoff, Pequea, Pa., one 18 inch wheel.
Ulrick Winter, Harmony, Pa., one 60 inch wheel.
J. Jonnson & Sons, Knoxsville, Pa., one 30 and one 21 inch No. 2 wheel.
G. W. Charles & Co., High Point, N. C., two 18 inch No. 2 wheels.

H. Holyfield. Rockford, N. C., one 13 inch No. 2 wheel.

New Castle County National Bank. Odessa, New Castle Co., Del., two 24 inch No. 2 wheels

David Kuhn, Willow Hill, Franklin Co., Pa., one 27 inch No. 2 wheel.

J. J. Jordan, Wardensville, Hardy Co., W. Va., one 27 inch No. 2 wheel.

Z. W. Evans, Barnitz, Chowan Co., N. C., one 30 inch No. 2 wheel.

Eli Henry, Graydon, York Co., Pa., one 18 inch No. 2 wheel.

Deal Bros. Milling Co., Cook's Mills, Bedford Co., Pa., one 21 inch No. 2 wheel.

Turner Bros., Vance, Iredell Co., N. C., one 30 inch No. 2 wheel.

A J. Settlemeyer, Nicholsonville, Cleveland Co., N. C., one 27 inch No. 2 wheel.

Mrs. A. E. Woad, Lancaster, Pa., two 21 inch No. 2 wheels.

E. M. Hobson & Co., Brokeneal, Campbell Co., Va., one 24 inch No 2 wheel.

Surface & Tingler, Paint Bank, Craig Co., Va., one 11½ inch No. 2 wheel.

William Ebaugh, Stewartstown, York Co., Pa., one 15 inch No. 2 wheel.

J. A. Holmes, Pine, Pulaski Co., Va., one 15 inch No. 2 wheel.

Fountain Philpott, Liletown, Ky., one 18 inch wheel.

F. W. Jones & Co., Fishing Creek, Columbia Co., Pa., one 30 inch No. 2 wheel.

H. F. Neikirk & Son, Keedysville, Washington Co., Md., one 18 inch wheel.

Warner Moore & Co., Richmond, Va., two 36, one 54, one 48, one 42 and one 24 inch No. 2 wheels.

Rio Milling Co , Charlottsville, Va , one 42 inch No. 2 wheel.

Hon. H. S. Morey, Hamilton, Butler Co., O., one 21 inch No. 2 wheel.

Harvey Terry, Elizabeth City, Pasquotank Co., N. C., one 36 inch No. 2 wheel.

A. M. Hook, Capon Bridge, Hampshire Co., W. Va., one 30 inch No. 2 wheel.

Gardner & Seymour, Fulton N. Y., one 42 inch No. 2 wheel.

A. G. Giffin & Co , Weston, Lewis Co., W. Va., one 60 inch No. 2 wheel

W. L. Goodnow & Co., East Jaffrey, Chester Co., N. H., one 42 inch No. 2 wheel.

Columbia, Potter & Heyler, Guide Rock, Webster Co., Neb., one 54 inch No. 2 wheel.

Vassar Milling Co., Vassar, Mich., two 48 and one 54 inch No. 2 wheels

C. F. Hanna, Pittsburg, Pa., one 42 inch wheel.

Roanoke Grocery & Milling Co., Roanoke, Va., one 30 inch No. 2 wheel

D. E. Buckey, Middleburg, Carroll Co., Md., one 36 inch No. 2 wheel

J. J. Greaver, Letcher, Bath Co., Va., one 18 inch No. 2 wheel.

Wm. M. Zollman, Lexington, Rockbridge Co., Va., two 30 inch wheels.

Dr Alfred Leigh, Colvin Run, Fairfax Co., Va., two 30 inch No. 2 wheels.

Wm. Buzby, Moorestown, Burlingten Co., N. J., one 48 inch No. 2 wheel.

Kamp and Carter, Havilla, Northumberland Co., Va., one 36 and one 30 inch No 2 wheels.

D. C. Timanus & Bro., Baltimore, Md., one 27 inch No. 2 wheel.

W. P. Wingrove, French Creek, W. Va., one 30 inch No. 2 wheel.

H. S. Swerdferger, Hardwick, Caledonian Co., Vt., one 36 inch No. 2 wheel.

L. M. Godley & Co., Scottville, N. Y., one 48 inch No. 2 wheel.

Daniel Harvey, Childs, Cecil Co., Md., one 21 inch No. 2 wheel.

East River Milling Co., East River, N. Y., one 48 inch wheel.

Nat Mason, Rux, Brunswick Co., Va., one 18 inch wheel.

D. B Landis, Lancaster, Pa., one 18 inch No. 2 whcel.

H. M. Jack, Cedarville, Gilmer Co., W. Va., one 60 inch No. 2 wheel.

T. J. & C. N. Ingram, Lilesville, N. C., one 66 inch wheel.
Briggs & Bro., Ray, Madison Co., N. C., one 66 inch wheel.
George Brown, Williamsburg, Pa., one 18 inch No. 2 wheel
John S. Efird, Whitely, Stanley, Co., N. C., one 48 inch wheel.
Edward Worthington, Glyndon, Md., one 54 inch wheel.
Alfred E. Stacey, Eldridge, N. Y., one 42 and one 27 inch wheel.
French, Watson, & Co., Hartford, Vt., one 48 inch No. 2 wheel.
Charles A. Breed, Medina, N. Y., two 36 inch wheels.
Pierce Bros. & Co , Ivanhoe Furnace, Va., one 15 inch wheel
James A. Ware, Kings Mountain, N. C., two 11½ inch wheels.
English & Brown, Glade Hill, Va., two 18 inch No. 2 wheels.
G. T. McClure, Oceana, W. Va., one 36 inch No. 2 wheel.
Joseph Graybill, Boone Path, Va., one 30 inch wheel.
J. S Eaton & Bro., Taylorville, Miss., one 24 inch No. 2 wheel.
A. A. Booth, Posey, Va., one 18 inch wheel.
J. W. Purviance, Purdy, Tenn., one 30 inch No. 2 wheel.
Moses Martin, Pilot, Va., one 18 inch wheel.
W. H. Voshell & Bro., McDonough, Del., one 36 inch wheel.
Bernard Johnson, Healing Springs, Va , one 15 inch No. 2 wheel.
D. M Payne, Trinity College, N. C., two 15 inch No. 2 wheels.
J. T. McLaurin, Bezer, Miss., one 11½ inch wheel.
Henry Aunspaugh, Fincastle, Va., one 11½ inch wheel.
E. S. Hall, Ray, N. C., one 15 inch wheel.
Frazier & Bowser, Saxonburgh, Pa., one 36 inch No. 2 wheel.
G Maish, Token Creek, Wis , one 27 inch No. 2 wheel.
M. L. Beam, Ellenboro, N. C., one 13 inch No. 2 wheel.
J. W Beasley, Oats, S. C., one 30 inch No. 2 wheel.
W. & T. Whateley, Kew, Va , one 18 inch No. 2 wheel.
John Neiman, York, Pa., one 30 inch No 2 wheel.
P. M. Morris, Concord, N. C , one 24 and one 18 inch wheels.
L. L. Station, M D., Tarboro, N. C., one 21 inch No. 2 wheel.
A. P. Cole, Marion, Va., one 24 inch No. 2 wheel
Spanogle & Yeager, Reedsville, Pa., one 21 inch No. 2 wheel.

W. G. Nininger, Daleville, Va., one 21 inch wheel.
J. Lee Koiner, Crimora, Va., one 42 inch No. 2 wheel.
J. R. Garst & Bro., Roanoke, Va., one 18 inch wheel.
Samuel Hively, York, Pa., one 18 inch wheel.
G. W Gerhart, Finland, Pa., one 36 inch wheel.
Walter Milliken, Wellsville, N. Y., one 24 inch wheel.
C. W. Dexter, Valley Mills, N. Y., one 24 inch wheel.
L. M. Courtney, Mundys Point, Va., one 24 inch wheel.
E. C. Grayson, Long Hollow, Va., one 30 inch wheel.
J. M. Anderson & Co., Washburn, N. C., one 11½ inch wheel.
M. H. McClintic, Warm Springs, Va., one 11½ inch wheel.
A. N. Deacon, Tappahannock, Va., one 30 inch wheel.
John Nelson, Cessna, Pa., one 36 inch wheel.
Moore, Jones & Co., Bridgeton, N. J., one 42 inch wheel.
L. E. Brewer, Salem, N. C., one 27 inch wheel.
J. J. Browder, Sweetwater, Tenn., one 27 inch wheel.
Schlicht & Son, Crocker, Mo., one 18 inch wheel.
Lowman Bros., Staple, Texas, one 66 inch wheel.
D. M. & Geo. Steen, Boise, Idaho, one 48 inch wheel.
E. C. Grayson, Radford, Va., one 27 inch wheel.
E Kitzmiller, Blain, W. Va., one 36 inch wheel.
James Frazee Milling Co., Baldwinsville, N. Y., eight 42 inch No. 2 wheels.

Lack of space prevents our publishing the names of all who are using "SUCCESS" Wheels. There are thousands of these wheels in use in this and other countries, driving all kinds of machinery.

SAW MILLS.

Empire Lumber Co., Eau Claire, Wis., one 72 inch No. 2 wheel

A. R Gould & Co., Presque Isle, Aroostook Co., Me , one 60 inch No. 2 wheel.

Hubbinger Bros., Frankenmuth, Saginaw Co., Mich., two 48 inch No. 2 wheels.

Burgess & Bromley, Dickson, Wayne Co., W. Va., one 42 inch No. 2 wheel.

R. S. Read, East Fairfield, Franklin Co., Vermont, one 42 inch No. 2 wheel.

G J. Hodges, Ripton, Addison Co., Vt., one 21 inch No. 2 wheel.

Lincoln Lumber Co., Lincoln, Vt , one 27 and one 18 inch No. 2 wheel.

Thomas H. Phair, Presque Isle, Aroostook Co., Me., one 42 inch No 2 wheel.

Look & Lincoln, Marion, Smyth Co., Va., one 27 inch No. 2 wheel.

Harold Weston, Boston, one 60 inch No. 2 wheel.

Lewis, Morton & Manuel, St. Albans, Franklin Co., Vt., one 30 inch No 2 wheel.

J. Fletcher Deakyne, Middletown, New Castle Co., Del., one 24 inch No. 2 wheel.

J. Wardell, Emmett, Ada Co., Idaho, one 54 inch No. 2 wheel.

Flippen & Reeves, Atlas, Pittsylvania Co., Va., one 18 inch No. 2 wheel

S. C. & S. S. Varney, Lincoln, Addison Co., Vt., one 27 inch No. 2 wheel.

C. Stone, Pulaski City, Pulaski Co., Va , one 21 inch No. 2 wheel.

D. W Williams & Co., Narcott, Floyd Co., Va., one 42 inch No. 2 wheel.

Ralph Beach, Watsun, Lewis Co., N. Y., one 36 inch No. 2 wheel.

J. M Burt & Son, Enosburgh, Franklin Co., Vt., one 30 inch wheel.

A. C. Cole, Loves' Mills, Washington Co., Va., one 21 inch No 2 wheel.

Oscar Halleck, West Falls, Erie Co., N. Y., one 36 inch No. 2 wheel.

A. H. Ricker, Groton, Caledonia Co., Vt., one 27 inch No. 2 wheel.

W. F. Allen, West Stewartstown, Coos Co., N. H., one 54 inch No. 2 wheel.

F. M. Purdy, Morrisonville, Clinton Co., N. Y., one 66 inch No. 2 wheel.

Dyson & Muldrow, Florence, S. C., one 42 inch No. 2 wheel.

S. G. Tisdale, East Middlebury, Addison Co., Vt., one 36 inch No. 2 wheel.

M. D. Poor, Antrim, Hillsborough Co., N. H., one 30 inch No. 2 wheel.

J. F. Whitney, Chuckatuck, Nansemond Co., Va., one 30 inch No. 2 wheel.

W. E. Kinney, Castleton, Rutland Co., Vt., one 24 inch No. 2 wheel.

J. C Dodson & Son, Pilot Mountain, Surry Co., N. C., one 15 inch No. 2 wheel.

C. W. & H. B. Ferguson, Lebanon, Russell Co., Va., one 30 inch No. 2 wheel

D. D. F. Farnsworth, Buchannon, Upshur Co., W Va., one 48 inch No. 2 wheel.

R. A. B. Widmer, Constableville, Lewis Co., N. Y., one 30 inch No. 2 wheel.

Silas J. Benjamin, Benton, Columbia Co., Pa., one 36 inch No. 2 wheel.

David Mauney, Cherryville, Gaston Co., N. C., one 24 inch No. 2 wheel.

W. S. Wells, Grover, Cleveland Co., N. C., one 24 inch No. 2 wheel.

L N. Pinney, Portsmouth, N. H., one 24 inch wheel.

Giles W. Daily, Bridgewater, Vt., one 24 inch No. 2 wheel.

Jones, Bergin & Co., Nanticoke, Pa., one 36 inch No. 2 wheel.

J. E. Martin, Grafton, N. H., one 36 inch No. 2 wheel.

Bradley Bros., Warren, Vt., one 27 inch No. 2 wheel.

Stock Growers & Traders Bank, Warren, Vt., one 27 inch No. 2 wheel.

A. E. Sides, Mount Airy, N. C., one 36 inch No. 2 wheel.

A. J. Bumpus, Bumpus Mill, Tenn., one 36 inch wheel.

C. C. Joy, Sherman Mills, Me., one 48 inch wheel.

E. A. Walker, Boone, Pa., one 15 inch wheel.

T. H. Buxton & Son, Jericho, Vt., one 36 inch wheel.

Wesley Ayers, Green Mountain, N. C., one 18 inch wheel.

A. J. & L. D. Holmes, Gouverneur, N. Y., two 54 and one 48 inch wheels.

Lincoln Lumber Co., Lincoln, Vt., one 21 inch wheel.

E. A. & M. E Davis, North Tayston, Vt., one 30 inch wheel.

F. W. Carpenter, Port Chester, N. Y., one 24 inch wheel.

John D. Beck & Sons, Cantonment, Fla., one 30 inch wheel.

Richard H Ratcliff, Cedar Bluff, Va., one 27 inch wheel.

John A. Reynolds, Simmonsville, Va., one 21 inch wheel.

William McKeage, Grant, Pa., one 36 inch wheel.

H. E. Rose, Churchill, Mich., one 36 inch wheel.

Maynard & Ingram, Lilesville, N. C., one 21 inch wheel.

C. W. Huntington, Orange, Vt., one 30 inch wheel.

H. L. Gilman, Groton, Vt., one 36 inch wheel.

J. A. Aylsworth, Bozeman, Mont., one 18 inch wheel.

F. W. Eggleston, Mendon, Vt., one 18 inch wheel.

Fred Parker, Waitsfield, Vt., one 30 inch wheel.

Bliss & Suydam, Baldwinsville, N. Y., one 60 inch wheel.

S. B. Moore, Ticonderoga, N. Y., one 60 inch wheel.

W. H. Burbee & Son, Windham, Vt., one 18 inch wheel.

W. L. Webster, Tyson, Vt., one 24 inch wheel.

C. S. Blake, East Cornwall, N. Y., one 24 inch wheel.

A. B. Marshburn, Eagle Rock, N. C., one 36 and one 24 inch wheel.

PAPER AND PULP MILLS.

Cascade Wood Pulp Co., Lockport, N Y., one 33 inch No. 2 wheel.

McArthur Bros., Danbury, Fairfield Co., Conn., one 42 inch No. 2 wheel.

Thomas E. Sterne, Chatham, Columbia Co., N. Y., one 24 inch No. 2 wheel.

Hartland Paper Co., Middleport, Niagara Co., N. Y., one 48 and one 24 inch No. 2 wheels.

Berlin Mills Pulp Co., Berlin Mills, N. H., three 66 inch No. 2 wheels.

Potomac Pulp Co., Falling Waters, West Va., one 39 inch No. 2 wheel.

P. H. Glatfelter, Spring Grove, York Co., Pa., one 48 and one 36 inch No. 2 wheels, in iron cases.

Empire Wood Pulp Co., Black River, N. Y., six 36 inch No. 2 horizontal wheels.

Allen Bros. Co., Sandy Hill, Washington Co., N. Y., one 21 and one 18 inch wheels.

Wm. Waugh & Bro, Fulton, N. Y., one 54 and one 36 inch No. 2 wheels.

Philip McGuire, Forest Port, N. Y., two pair of horizontal 30, one 27 and one 18 inch vertical No. 2 wheels.

Raleigh Paper Co., Raleigh, N. C., one 54 and one 24 inch No. 2 wheels.

C. K. Williams & Co., Easton, Northampton Co., Pa., one 36 inch No. 2 wheel.

Howland & Co., Sandy Hill, Washington Co., N. Y., one 48, three 42, two 27 and one 24 inch vertical and one horizontal 24 inch wheels.

Whiteman Pulp and Paper Co., Dansville, Livingston Co., N. Y., one 30 and one 21 inch No. 2 wheels.

Wm. Mann Paper Co., Lambertville, Hunterdon Co., N. J., one 54 inch No. 2 wheel.

Remington Paper Co., Watertown, N. Y., two 42 inch No. 1 horizontal wheels.

Woodbine Paper Co., Baltimore,—mills at Woodbine, Md., one pair of 27 inch horizontal wheels.

Allen & Sherman, Port Henry, N. Y.,—mills at Plattsburg,—two pair 36 and one 48 inch horizontal No. 2 wheels.

John A. Manning, Troy, N. Y., one 66 inch wheel.

Manning & Peckham, Troy, N. Y., one 24 inch and one 31 inch horizontal wheels.

Lynchburg Pulp and Paper Co., Lynchburg, Va., four 54 and one 66 inch No. 2 wheels.

Oswego River Paper Co., Phœnix, N. Y., two 60 and one 48 inch No. 2 wheels

Franklin T. Ray, Utica,—mills at Fayetteville, N. Y , one horizontal 24 inch No 2 wheel.

Oswego Indurated Fibre Co., Oswego, N. Y., one 36 inch No. 2 wheel.

J. B. Brewer, Murfreesboro, N. C., one 24 inch No. 2 wheel.

Moyer & Williams, Greig, Lewis Co., N. Y., one 24 and one 18 inch horizontal wheels.

Berstler Bros , Sheeder, Chester Co., Pa., one 36 inch No. 2 wheel

Potomac Pulp Co., Conowingo, Md., one 39 inch wheel.

F. E. Robinson, Carthage, N. Y., five 60, one 36 and one 33 inch wheels.

Standard Pulp Co., Oswegatchie, N. Y., three pair of 33, one 18 and one 15 inch horizontal wheels

Glens Falls Paper Co., Glens Falls, N. Y., one 42 and one 30 inch wheels

And many others.

MISCELLANEOUS.

Groverton Electric Light Co., Groverton, Coos Co., N. H., one 48 inch No. 2 wheel.

Ashland Mill and Electric Light Co., Ashland, Saunders Co., Neb., one 48 inch No. 2 wheel

B. F. Gilbert, Washington, D. C., one 18 inch horizontal wheel.

Gonzales Water Power Co., Gonzales, Texas, one 72 inch wheel.

Fred. Ames, North Easton, Mass., one 30 inch No 2 wheel.

L. C Piser, Shushan, N. Y., one 54 inch wheel.

T. D. Davidson, Sauk Centre, Minn., one 60 and one 48 inch wheel

Huot & Co., Quebec, Canada, one 42 inch wheel.

Union Drawn Steel Co , Beaver Falls, Beaver Co., Pa., one 54 and one 42 inch No. 2 wheels

Northfield Mfg. Co., Northfield, Washington Co., Vt., one 42 inch wheel.

Charles Woodruff, Binghampton, N. Y , two 54 inch wheels.

E. & C. L. Collin, Fayetteville, Onondago Co., N. Y., one 24 inch No. 2 wheel.

L D. Wilson, Granville, Addison Co., Vt., one 24 inch No. 2 wheel.

Sloat & Greenleaf, Watertown, N. Y., one 54 inch No. 2 wheel.

Wilkesborough Mfg. Co., Wilkesborough, Wilkes Co., N. C., one 30 inch No. 2 wheel

Beaver Falls Cutlery Co., Beaver Falls, Beaver Co., Pa., one 42 inch No. 2 wheel.

Eames Vacuum Brake Co., Watertown, N. Y., two 54 and two 36 inch No. 2 wheels

Ithica Gun Co., Ithica N. Y., one 21 inch horizon al wheel.

Robert C. McCulloch, Patterson, N. J., one 24 inch horizontal No. 2 wheel.

J. M. Luther, Marion, Smyth Co., Va., two 36 inch No. 2 wheels.

E. H. Ziegler, Stewartstown, Pa., one 15 inch No. 2 wheel.

J. M. Channel, Dayton, Ill., one 27 inch No. 2 wheel.

Jacob Bonsack, Bonsack, Roanoke Co., Va., two 24 inch and one 18 inch wheels.

S. J. & H. C. Whiteford, Slate Hill, York Co., Pa., one 36, one 42 and one 18 inch wheels.

F. Cantrell, Campobella, S. C., two 18 inch wheels.

W. H. Custer, Graysville, Va., one 18 inch wheel.

Moore & Clay, Plymouth, Vt., one 30 inch wheel.

D. D. Pridgen, Okohay, Miss., one 24 inch No. 2 wheel.

W. S. Seavers & Son, Marion, Va., one 18 inch wheel.

Harrison & Co., Honaker, Va., two 36 inch No. 2 wheels.

Seguin Water & Ice Co., Seguin, Texas, one 54 inch wheel.

R. D. Powell, Paw Paw, W. Va., one 27 inch wheel.

J. M. Young, Redy, Franklin Co., Va.. one 15 inch wheel.

American Axe & Tool Co., Mill Hall, Pa., one 60 and one 36 inch wheels.

L. L. Patterson & Bros., Curtis Mills, N. C., one 21 inch wheel.

J. I. Bates, Dyberry, Pa., one 36 inch wheel.

Spicer & Balcomb, Carthage, N. Y., one 42 inch horizontal wheel.

Henry McCormick, Harrisburg, Pa., one 48 inch wheel.

J. M. McKee, Pinkney, Texas, one 24 inch wheel.

Sun Milling Co., Mansfield, Pa., two 30 inch wheels.

Dillion & Griswold, Sterling, Ill., five 72 inch wheels.

Chas. Perry Mfg. Co., Rehoboth, Mass., one 18 and one 15 inch wheels.

G. L. Carter, Pulaski, Va., one 42 inch wheel.

J. J. Duane Mfg. Co., Weston, Vt., one 21 inch wheel.

A. J. Perry, Linden, N. Y., one 21 inch wheel.

John P. Gose, Burks Garden, Va., one 27 inch wheel.

C. K. Anderson & Son, Reseland, Va., one 21 inch wheel.

Seneca Falls Mfg. Co., Seneca Falls, N. Y., one 42 inch wheel.

Columbia Flint Co., Columbia, Pa., two 60 inch wheels.

John O. Dean & Co., South Easton, Mass., one 36 inch wheel.

A. M. Cabiness, Shelby, N. C., one 21 inch wheel.

S. K. Lemon, Iron Gate, Va., one 54 inch wheel.

James Dempster, Knoxville, Tenn., one 30 inch wheel.

Geo. Bannister, Warren, Vt., one 15 inch wheel.
S. L. Burks, Red Hill, Va., one 21 inch wheel.
J. M. Batchelder & Son, Plainfield, Vt., one 36 inch wheel
Harsison Manley, Everson, W. Va., one 54 inch wheel.
Sandy Hill Iron and Brass Works, Sandy Hill, N. Y., one 18 inch wheel.
S. G. Charlebois Watertown, N. Y., one 30 inch wheel.
Rufus Brugh Nace, Botetourt Co., Va., one 15 inch wheel.
Marshall Estate, Troy, N. Y., one 27 inch horizontal wheel.
Brandon Manufacturing Co., Brandon, Vt., one 27 inch wheel.
Danville Ice Co., Danville, Va., one 60 inch wheel.
Charles Perkins, Bridgewater, Vt., one 18 inch wheel.
W. S. Huntley, Ripton, Vt., one 21 inch wheel.
H. O. & W. A. Brown, Deerfield Centre, N. H., one 24 inch wheel.
James W. Cassell, Rocky Mount, Va., one 21 inch wheel.
D. A. Maurey, Cherryville, N. C., one 13 inch wheel.
M. H. Holland, Rockey Mount, Va., one 10 inch wheel.
J. F. Cline, Strinestown, Pa., one 42 inch wheel.
Isaac Warcup, Oakville, Ontario, Canada, one 21 inch wheel.
Mayer Pottery Co., Beaver Falls, Pa., one 36 inch wheel.
H. Stevens, Vergennes, Vt., one 18 inch wheel.
Brownville Iron Works, Brownville, N. Y., one 30 inch wheel.
J. T. Gooch, Osceola, Ky., one 42 inch wheel.
G. H. Vaden, Galveston, Va., one 21 inch wheel.
Harmony Society, Harmony, Pa., one 36 inch wheel.
Hollingsworth Wheel Co., Wheel, Md., one 24 inch horizontal wheel.
John Dutry, Dillsburg, Pa., one 18 inch wheel.
Newton & Thompson Mfg. Co., Brandon, Vt., one 15 inch wheel.
Davidson Sons Marble Co., Watertown, N. Y., two 54 inch wheels.
S. P. Demarest, Oakland, Bergen Co., N. J., two 42 inch No. 2 wheels.
Fairmount Yarn Mills Co., Spartanburg, S. C., one 42 inch No. 2 wheel on horizontal shaft.
Rural Hosiery Mill, Amsterdam, N. Y., one 42 inch No. 2 wheel.

Heardmont Cotton Mfg. Co., Elberton, Ga., one 42 inch No. 2 wheel.

James Thompson & Co., Valley Falls, N. Y., one 60 inch No. 2 wheel.

Index Knitting Co., Cooperstown, N. Y., one 60 inch No. 2 wheel.

Ledbetter Mfg. Co., Rockingham N. C., one 54 inch No 2 wheel.

Ravine Mills Co., Vernon, Conn., one horizontal 15 inch No. 2 wheel.

Nelson Woolen Mfg. Co., Tye River, Va., one 27 inch No. 2 wheel.

Swift Creek Cotton Mill Co , Petersburgh, Va., one 24 inch wheel.

C. W. Rockwell & Co., Rockwell's Mills, N. Y., one 66 inch No. 2 wheel.

O. A. Slenker, Snowville, Pulaski Co , Va., one 24 inch No 2 wheel.

Henry McNair, Mt. Olive, Miss., one 21 inch wheel.

Morse & Kaley Mfg. Co., Milford, N. H , one 60 inch wheel.

Powhatten Improvement Co , Baltimore, Md., one pair 24 inch horizontal wheels.

Cumberland Mills, Cumberland N. C., one 48 inch wheel.

Stimpson & Steele, Turnersburg, N. C , one 30 inch wheel

Birdsall Bros., Honesdale, Pa., one 21 inch horizontal wheel.

Marseilles Water Power Co., Marseilles, Ill., one 72, three 60, one 66 and one 48 inch No. 2 wheels.

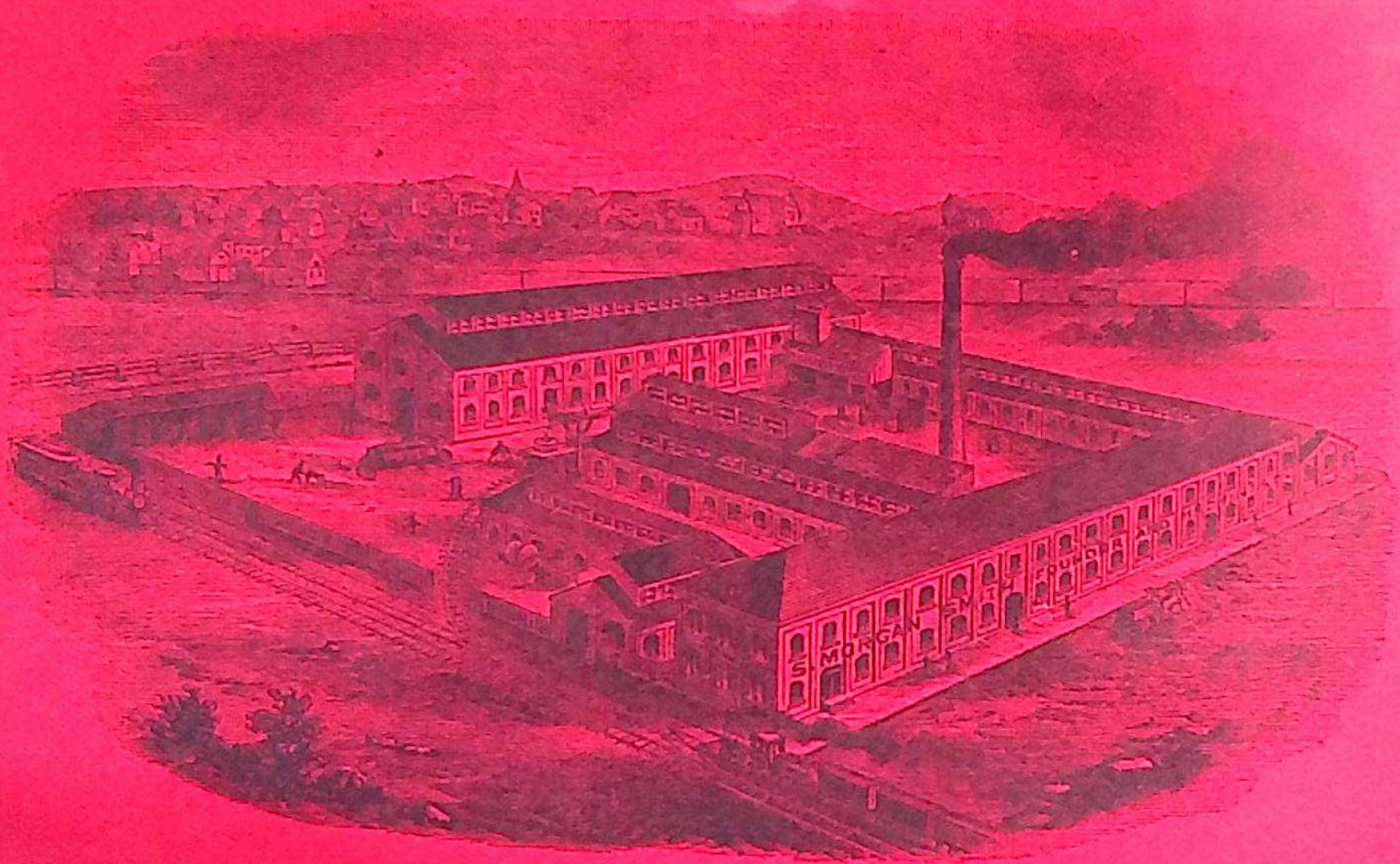
Oswego Gas Light Co., Oswego, N. Y., one pair horizontal 42 inch No. 2 wheels.

Seneca Electric Light Co., Seneca Falls, N. Y., one 48 inch No. 2 wheel.

Nill & Jess, Watertown, N. Y., one 60 and one 48 inch No. 2 wheels.

And many others.

We will be pleased to furnish names of persons using New Success Turbines to those who wish to learn how the users of same are pleased.



WORKS ON P. R. R. AND W. M. R. R.